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Delivered at the Opening of the Medical Department of Victoria University, Manchester, on Oct. 1st, 1908,

BY SIR T. CLIFFORD ALLBUTT, K.C.B., M.D. CANTAB., HON. D.SC. OXON., F.R.C.P. LOND., F.R.S., &c.,

REGIUS PROFESSOR OF PHYSIC AT THE UNIVERSITY OF CAMBRIDGE, ETC.

GENTLEMEN,—It is one of the noble attributes of the human mind never to rest contented with an achievement, be it never so useful, never so glorious. The old Manchester Infirmary, which happily escaped the division so injurious to some other hospitals, was as famous in its great physicians and surgeons, and in its generous and enlightened benefactors, as in form it was stately and in its history monumental. Yet the mind of your citizens, thankful as they have been for a great past, would not rest contented on form and history; gazing still insatiably into the future, contemplating the new scope and potencies of modern medicine, both personal and national, reading the principles on which this progress had been, and is being, made, and the signals of these ever-widening ranges of knowledge, power, and beneficence, Manchester men, in alliance with their University, are inspired to build yet more stately, to endow more richly, and thus to organise that still vaster compass of charity, of learning, and of municipal and national efficiency which I have visited and to which I have the great honour of bearing witness to-day. Thankful, nevertheless, as I have said, for a great past; but while these words are passing my lips the most ardent pilgrim will pause for a moment as, in the visions of his memory, are reflected the figures of those strong companions who so lately were breasting the hill with us, but whose hands are now dropped and whose familiar and prophetic voices are fallen into silence. Manchester and Manchester University, even after the loss of such men as Leech, Dreschfeld, Harris, Ashby, Cullingworth, Jones, Collier, will be more and more; notwithstanding we are haunted by the pathos of human life and death, wherein they, who of all of us knew best how to rejoice in your new hopes and new promises, have lately been taken from us; and we are left to rejoice, if by no means alone, yet without their wise counsels, without the enthusiasm of their presence. And yet I repeat "by no means alone." It is indeed the older men, such as he who now addresses you, who see most vividly, and feel most keenly, that the fountains of life ever renewed, and of progress reinforced and accelerated, have their springs not in our generation but in the bands of eager young men whom year by year and day by day your University bears in its pride. And if sometimes in their naughtiness these ardent youths are inwardly disposed to scorn our ingatherings, to despise our experience, and even to hold our wisdom in suspicion,—well, it is better than if they had fed themselves with our formulas and fondled our idols. Social development has always been discontinuous, and a succession of slightly explosive generations is better than the alternative of revolution, of catastrophe by longer accumulation of pent-up stresses.

HOSPITAL MANAGEMENT.

Permit me on the threshold of this new infirmary to make a few remarks on hospital purposes and management. Of the management of the Manchester Infirmary I know nothing, and under this head no word of mine can be charged with censure or innuendo. I speak generally when I say that a prevailing error in hospital government is the failure of the lay managers to act in frank and equal partnership with the medical managers, whereby the full coöperation and best results of money and knowledge are more or less sacrificed, the machine runs with needless friction, and occasionally jams. In this matter the lay governor is a little apt to be arrogant, a little purse-proud. Yet, after all, money is but the raw material, to be worked up with knowledge. Upon a hospital board laymen, even wealthy laymen, may come and go and be noted of no man; whereas such changes in the hospital medical staff would be promptly disastrous, for the layman's hospital is a stationary hospital.

That money is of more value than knowledge is a vulgar and erroneous notion; yet in our partnership too often the lay manager presumes that the physician or surgeon is at the hospital not his partner but in some sort his servant. Occasionally indeed he is ungenerous enough to depreciate the equal benevolence of the medical services on the ground that if unsalaried they "pay" in profit and reputation. But do we find that in other professions public officers—as a clerk to justices, for instance, as a solicitor to a great banking company, as a consulting engineer or chemist to gas or water works—are unsalaried, because the office carries with it opportunities, reputation, and fees! By no means. The other day I asked a distinguished physician and a distinguished surgeon on the staffs of two leading London hospitals if it paid them, however indirectly, to devote thus their priceless services for the sick and for the raising up of successors like themselves? They answered almost in the same words, "The time I give to the hospital costs me 20 or 30 guineas a week"—surely a more than ample pecuniary recompense for any promotion in earlier years. Moreover, even in London, and more generally in the provinces, a man of parts and address, starting independently of a hospital, has opportunities of material gain on the average as good as, and quicker in return than, those of his fellow student who, more disdainful of commercial balances, at the hospital devotes himself in the first instance to science and charity. Yet it is on these men that the virtues and the honours of a great hospital chiefly depend.

Let us put it more plainly; a layman, with a purse in his hand, and a physician stand on either side of the bed of a sick man. The layman offers to spend £5 on the patient if the physician of his learning and benevolence will convert this cash into means of solace and cure. Neither partner is of much use to the sick man without the other. The man with the banknote cannot, it is true, allow the physician to spend the money uncontrolled; but, on the other hand, without the physician his money would be wasted. The partners, then, are not master and servant, but comrades; and if with many banknotes and many patients a great healing engine is created, the principle of frank and equal partnership is not modified. If the expert, after the manner of experts, is prone sometimes to forget the relative proportions of things, to push ideas beyond the limits of common sense, to be importunate, or even extravagant, the layman on his side is as prone to be domineering, meddlesome, and short-sighted. Everything in the healing machine costs money, and the layman must regard the ultimate economy of it; but as everything in it is also therapeutical whatsoever he may do or avoid affects more or less directly the treatment of the patients; whether it be, let us say, the heating and ventilation, the decoration of the walls, or even the baking of the bread and the quality of the blankets. Unless, then, the lay manager keep incessantly in touch with the medical he will continually make little mistakes and large blunders. Now do we, generally speaking, find this broad and continuous counsel between these partners in large hospitals? Do we not too often find on the contrary a lay board shutting itself up by itself, and week by week proceeding to business without conference with the honorary staff; acting, indeed, sometimes as if the staff existed only to do what it is told; a custom surely discourteous as well as mischievous to the business the two partners have at heart. How, then, should concord, mutual understanding, and harmonious and efficient coöperation be maintained? At Leeds every member of the honorary staff is, *ex-officio*, a member of the weekly board; thus at every board one or other of the staff is sure to be present; so that if any innocent-looking proposal be made which in so complex a machine might react prejudicially upon the welfare of the sick, a warning note is heard, and the proposal is deferred or modified. Larger issues are discussed, on due notice, by full boards of lay and medical members, with frank and equal interchange of opinion; but the staff vote is properly limited,—in my day to eight, the eight votes being readily distributed among the staff at the discretion of the members present; votes being, of course, allotted first to the members of any special department chiefly concerned in the issue. The result during my experience was that no cool breezes

chilled the cordial partnership between board and staff in that successful hospital; nor was there any loss of efficiency by cross purposes or conflicting opinions.

The next counsel I would offer is that a lively and effective sympathy be manifested with scientific aspiration and invention, even by lay managers who may be unable to perceive the purport of particular, or indeed of any researches. To speak personally, I shall never forget the almost comic astonishment of a certain weekly board to whom some 40 years ago I appealed for a very modest outfit of electrical scientific apparatus, and at a later date for means of registering surface temperatures by electrical thermo-couples, of recording continuous curves of bodily temperature by watchwork, and so forth. Bit by bit I did indeed get something of what I wanted, but with a delay and tediousness that crippled my endeavours. Now, I pray you to believe that no money is better expended than small sums allotted to investigation by young men of scientific ardour whose education in method is fairly adequate. If it does little more than keep the junior staff and their pupils active and curious the outlay is well rewarded.

CLINICAL PATHOLOGY.

And thus I am led naturally on, not merely to urge in general terms the alliance of clinical medicine with scientific research, for this is a counsel not needed in Manchester, but to advocate in particular a far closer intimacy and coöperation than at present exist between the physician and the pathologist. Since a few of us, some years ago, began to urge the creation of clinical laboratories close to the doors of the wards, something no doubt has been done; but it has been done, in my opinion, awkwardly and very partially. Herein I think the medical manager, as sinning against the light, is more to blame than the lay, so that the pathologist—I speak not now of morbid anatomy which has long enjoyed every advantage, but of pathology in its dynamic aspect—the pathologist in this sense is kept aloof from the patient whose processes it is his main business to interpret; and the physician, with morbid anatomy nearer his elbow, has been losing something of the sense of disease as dynamics, which, with all their fantasies of vapour and humour, was apprehended by our ancestors of the last two or three centuries. Of late years a remarkable integration has begun, and is rapidly proceeding, between anatomy and physiology; and, if medicine is to advance as it has been advancing, the same integration must be created between static pathology, medical practice, and dynamic pathology—the pathology of processes. That the pathologist must investigate the sick man in whose body these defects and perversions are at work seems too obvious for assertion. Yet when some few months ago I asked, somewhat ironically I fear, of a distinguished pathologist in a great university if he had free access to the wards of the hospital, he replied, "If I were to set foot in the wards there would indeed be a pretty hubbub in the staff." So the pathologist, at arm's length in a laboratory down the street, working, as it were, in a balloon, and fed upon occasional crumbs from the hospital table, never sets eyes upon the concrete problems which it is his business to solve. There seems to be an opinion abroad that the pathologist, who has never approached a patient since his graduation, can by some esoteric ingenuity put together the conditions of these problems in his laboratory; or indeed under these purer conditions find more comprehensible explanations. To endeavour in the laboratory thus to reproduce problems in simpler terms is a valuable part of scientific method; but surely it is a truism that such researches, unless incessantly tested by the touchstone of nature, are apt to lead at best to conclusions as abstract as the ingenious conditions out of which they arose are artificial. In the simpler sciences, it is true, such methods go farther; a mathematician, in no way conversant with machines, may often enlighten an engineer; but even in the simplicity of mechanics the shortcomings of mere academic methods soon become conspicuous: how much more crippled then must be the academic pathologist who is denied full conversance with those infinitely more complex and multifarious machines we call plants and animals! It seems absurd to labour such a point as this, and in a university so vigorously empirical as Victoria; still as we have long ceased to be surprised at the absurdities which convention and tradition maintain even in the hardest heads, even here these counsels may be useful.

How, then, are we to abolish so fallacious a distribution of work? The physician, who in the earlier phases of scientific medicine proved himself, on the very principles just proposed, to be the ablest of pathologists, can no longer, in the vast extension of the field, devote himself fully to pathological research. It is all he can do to coördinate its discoveries with clinical practice. Moreover, the field of qualitative clinical work is filling up, and progress now depends on the far more arduous and exacting quantitative appreciations. Both physician and pathologist, each by his own methods, must work in the ward at the facts; the pathologist must have almost as free a run as the physician—almost as free, for ultimately, of course, the physician must govern all that concerns the patient's well-being—and must accordingly have a laboratory of first instance in the neighbourhood of the ward; his departmental and research laboratories will, of course, be elsewhere, yet not so far away as to estrange him from the patients. By this concert the outlook of the physician himself, his assistants and his classes, would be continually enlarged, and the attention of the pathologist as continually riveted upon those signals, criterions, contingencies, interdependencies, eccentricities, lapses, glimpses, which in the laboratory no ingenuity can forecast or reproduce, but in which the practical and empirical physician has his being and justification.

And what is true of the hospital is no less true for private practice. It is not fair to the pathologist, it is not fair to the patient, in cases, let us say, of biochemical disorder, of vaccinal therapeutics, of obscure toxic processes, and so forth, to pick the brains of the pathologist at second hand. The pathologist should be summoned to take his proper part in consultation with the family physician, and any other consultant, all upon equal terms. So far as circumstances and the old customs of private practice permit, it is my endeavour to bring this about, and, if expenses must be kept down, the medical consultant may be permitted to resign a few of his visits to the pathologist, who, by the way, is anything but a rapacious person.

OUT-PATIENTS.

Of the departments of a great hospital that which is most rudimentary, rudimentary almost to chaos; that in which the evil, which in this world attends upon the good, survives most manifestly, and is perhaps increasing; that which on many grounds is open to the censorious criticisms of medical men outside its walls and of the public, and indeed of the hospital staffs themselves, is the out-patient department. Physicians resent all that savours of quackery, at any rate in medicine; yet is there any custom more apt to engender and to foster quackery than to encourage mobs to wander round our halls for potions to be hugged to their bosoms as charms? In not a few cases, it is true, these herbs and salts have some virtue; but in how many are they not stock recipes, either wholly futile or at best impotent as auxiliaries against unwholesome habits and conditions of life which the physician, unable to ameliorate, gets weary of denouncing? Too soon he learns to say to himself, "Poor creatures, errant or sinful, God help them, I cannot; yet if pill or potion be a comfort to them, or a hope, by all means let them have it." And the quackery does not end here; unhappily it permeates upwards into higher social ranks, to the degradation of scientific therapeutics.

In respect of the out-patients, hospital abuse, by persons able to pay for advice, is perhaps exaggerated; still, by direct provision or by means of provident dispensaries, some of them might be induced to obtain the more individual and discriminating aid of physicians living among them, conversant with them and their ways, and with the external causes and conditions of their maladies. Thus, by treatment of a more comprehensive kind on physiological lines, vulgar notions of the laws of life and disease would be enlarged, and some health would be compassed not for the body only but also for mind and character.

Hitherto I have been considering the out-patients of Great Britain as hordes; but at the same time I am not forgetful of the precious gifts of diagnosis, and even of treatment, which thus fall to the lot of many of them, as to persons overtaken by acute or vexatious diseases, but who, even if fully aware of the nature of the case, are unable or unprepared to pay for medical aid. Many sufferers are thus consigned to the wards, and on discharge are kept still under supervision; others are benefited by topical remedies, specific drugs, or elaborate technical methods, such as

massage, electricity, x rays, or medicated baths, which in general practice are out of reach. Again, in respect of diagnosis, there are poor patients as well as rich whose maladies are obscure in nature or difficult to manage; patients who may have made, and be making, payments to a medical man, but are quite unable to add the fees of a consultant or the charges of costly methods of cure. Even in the poorer families of the middle classes serious illness is a grievous or even a crippling expense, especially in these days of elaborate and costly therapeutics, against which some more orderly provision is sadly needed. As things are, these important cases are more or less swamped by the horde.

How, then, is the out-patient department to be organised for efficiency, and with respect to the general practitioner, who in these latter days has become far too competent a man to be ignored? Time permits me to consider one part only of the problem. It has been proposed that access to an out-patient department shall be only by the introduction of a medical man in the district. This is too narrow a proposal. To deny a ready relief to the sick and needy who have no doctor, or know none, or in any case are unable to pay for his intervention—in cases, for instance, of incipient acute disease, of infections, or more insidious maladies—would not be, and ought not to be, tolerated by the public, whether in the name of charity or of civil order. Moreover, the delicate question must arise, How fairly the general practitioner would play the game? As things are, the ill-paid "club doctor" often, and not unnaturally, declines to add to his bounden duties; nay, the physician who resents a hint at "farther advice," or sniffs at it when obtained, is not quite extinct. Again, what about the time, the trouble, and the comparative ineffectiveness of brief notes or messages?

The proposal as it stands, then, is narrow and impracticable; yet it touches an important principle, especially as regards cases of difficult diagnosis, those again which need costly methods of cure, and afflicted persons who have paid fees but can pay no longer. To encourage family doctors to refer to the hospital patients of these two classes is then the duty of the managers; and for the cases of difficult diagnosis or treatment I suggest that the need would be met by the appointment at every hospital, and in each department, of an invariable hour when the outside physician and his patient could rely upon a consultation with one or other of the honorary staff in his respective department. These hours should be fairly frequent and invariable; the busy practitioner cannot be counting days and hours, he must be able to say offhand when John or Mary shall meet him at the hospital gates. There he would probably meet others of his brethren on similar errands; and if all could join in each consultation they would derive for themselves as much of interest and experience as of advantage for their patients. Such a system would surely extend itself in many incalculable ways; it would offer a fertile field for the younger consultants, raise the value of medical methods in the eyes of the public, and tend by example to reduce the burden of hangers-on and of routine prescribing among them, and even, perhaps, of vague discontent and quack-hankering among the well-to-do. I will only add that on the medical side provision should be made for consultation in cases of mental disease also.

MEDICINE AND THE STATE.

There is no doubt some discontent in our profession that Medicine has not the rank and consideration which are its due; such as are accorded for example to the Church, the Law, the Navy and Army. Now in so far as any such uneasiness is engendered of petty personal ambitions we need not dwell upon it longer than to recollect that we shall attain to the social consideration we may deserve by the self-respect which ignores the trivial conceits of the day, which is quick to think for others, slow of offence. But this is not all. The physician, if a somewhat touchy person, is not arrogant; the discontent lies deeper and springs from more honourable motives; from a nobler jealousy for our calling, its achievements and services; from a restless sense of great powers not finding their full play and responsibility in the national functions and counsels. Thus regarded, our discontent may be justified, and desire only what is due to the honour and interests of the commonwealth.

Now there must be some reason, if Medicine has failed hitherto to rank with the other great services, why this is so. The answer is not difficult: that in so far as we are concerned only with individual pains, in so far, as some naughty wit has put it, as we are but plumbers and glaziers of the individual body, we have neither place nor claim to public recognition. It is in respect of our concern with the larger issues of public health that our service and responsibilities become of national importance. In this respect, however, until yesterday and to-day we had not the knowledge to justify our vocation. The history of Medicine, broadly speaking, is melancholy reading; it is a record of devastation by pestilence, deplorable blights upon family life, and catalogues of medical formulas and practices as prodigious as the plagues before which priest and physician alike vaunted themselves in vain. Open the pages at hazard, perchance at John Evelyn's story, but a common instance of a common fate. Of Evelyn's nine children a son and a daughter only reached adolescence, and one of these, in the words of Jeremy Taylor, "that pretty person your strangely hopeful boy," was then cut off also; the daughter alone survived him. As in some classes even yet, in all classes then, such disaster was rather the rule than the exception, and the people went upon the facts accordingly: the fighting men, they more or less consciously argued, make us into a nation; the lawyers bring order into our midst; the Church has fostered learning and religion; it is the no less high vocation of medicine before commerce, before other subsidiary ends, to conserve and fortify man's body, the tabernacle of this prowess and this wisdom—the tabernacle, do I say? nay, in the words of Dr. Caird, St. Paul's dramatic contrast between the flesh and the spirit had but a temporary and rhetorical meaning, like the contrast between matter and energy; the body, spiritually considered, is the immediate organ and instrument of the soul. To maintain this organ and instrument not in the individual man only, but in the social body also, was the vocation of medicine, but science had hardly come to the birth and applied biology had not even been conceived. Medicine could not humbly wait for science, as science was waiting for the experimental method; competent or incompetent, she was forced to the front. Her pontiffs, therefore, strewed before the people chiefly some withered branches of tradition, and the Dead Sea fruit of a curious but mostly grotesque and unregenerate folklore. In the Middle Ages, indeed, great men could not fight for clear causes; they were confronted not only by truths in array one against another, but also by monstrous regiments of error and fiction—regiments to be mown down by the artillery of experiment, as feathered savages before the hail of the machine gun, but till then irresistible. Not till our time and with these arms victorious could medicine advance; but now it is moving so quickly that, borne on by the moving mass, we do not perceive the speed until we look back to see whence we have come. The belated knowledge is won. To-day we can answer bravely to our invocation. We are commanding the ear of the nations and solving their problems with deeds and revelations so triumphant that in their quandaries, even our unidea-ed governing classes, who had fallen to a belief in "compromise not as politics but as an excuse for routine," and had satisfied themselves of the efficacy of ignorance, are now compelled, bit by bit, to yield us some brusque and clumsy heed, to bully and then to knock under. For from the hands of our leaders the kings of the earth and its merchants have received the keys of Suez and Panama, the gates of the hemispheres; their wardens, the twin ogres of malaria and yellow fever,[1] being by our art if not dead yet toothless and impotent as Pope and Pagan; we have tortured the secret out of the demons of tuberculosis, sleeping sickness, plague, Mediterranean fever, wool-sorters' disease, cerebro-spinal meningitis, tetanus, syphilis, puerperal and surgical fevers—need I prolong the list of these modern discoveries, so brilliant as to shine best by their own light?—and where we have not yet extorted the whole secret, as from small-pox, scarlet fever, infantile diarrhœa, hydrophobia, we have so far mastered the tactics against them as to be reducing them to phantoms of their former malignity. Sadly late then as we have come into the field, we are in time to be the saviours of the nations as well as the guardians of the family; and to endow mankind with vast and fertile

[1] To yellow fever in Havana, year by year for some 200 years until 1902, about 750 lives were sacrificed. In the last three years not one death from this plague has been recorded there.

territories hitherto under the desolation of disease. Yet to be ministers of a newborn profession is not all loss. When Athene sprang full-grown from the head and heart of Zeus, were not the Olympians at first a little disdainful and aloof, and the divine maid a little wondering and shy? And probably the ægis was not quite ready; these artificers are always behindhand. Is not Medicine, born full-grown from the womb of our own time, if a little wistful at first, spared the hamper of a long past? Her gospel is not hidden behind an ancient and creaking machinery, nor are her eyes bent away from the future by a huge inheritance of undigested facts and opinions. The engineer, it is true, is a new demi-god, but he deals with far more elementary things; with means, not with ends. Joyfully we are putting on a hundred legs for one in the hope of escaping from ourselves, yet so far it seems very much in vain.

MINISTRY OF HEALTH.

What is now needed in England is no halt by our leaders, but the establishment of a General Staff of Medicine, to rebuke the purblind and inveterate habit in our countrymen of devoting their magnificent energy and their treasure to mopping up effects, in disregard of causes; to teach them better than to hustle each other with fussy, belated hurryings to and fro after evils have surged to a head, as, for instance, in the calamity of plague in India and in the typhoid disaster in South Africa; calamities no longer mysterious, noonday pestilences concerning which the modern physician had ample foreknowledge. Yet with all this knowledge, and infinitely more parcelled out in the several closets of the older ministries, or submitted to the patronage of selfish and awkward local authorities, generally coarse and inconsistent in their methods, and sometimes corrupt, medicine, as a function of the State, is still working as it were with her left hand. Her scattered official members have no unity; working piecemeal everywhere she has no coördination, no integrated self-consciousness. With no fixed apparatus for concerted action, energy is wasted in overlap, in jostling, in divided purposes, and in anomalies. Although her influence has penetrated into almost every function of society and directly and indirectly she is spending a great revenue, yet through the counsels of the nation she passes veiled and irresponsible. The new ideas which are stirring society are largely medical, yet society does not know where, in the back staircases or garrets of the Local Government Board, of the Home Office, of the Education Office, of the Board of Trade, of the Post Office, of the Registrar-General's department, of the Lunacy Commission, and so forth, each bee buzzing in its own little cage, medicine is to be found; nor how this new solvent and all-pervading influence are to be brought to the back of revenue or to the bar of public opinion and responsibility.

Our charge.—Let us consider, but for a moment and in outline, the charge of medicine in normal national functions. Abroad public medicine, which short-sighted people seem even still to see only through the taint and clatter of "hygienic" trade advertisements, public medicine, to which private practice must begin to play a subordinate and tributary part, has stretched out its arm beyond the several nations, is transforming the quarantine of man, animals, and plants, and creating a vast and masterful international service. At home to public medicine is intrusted, in the first quarter of life, the reckoning of births; the protection of infant life and growth; the valuing of each generation by comparison with the past and with normal standards of physiological institution. The new measure of medical school inspection, a far-reaching measure the full purport of which as yet the country has but little notion, the physical and mental conditions of education, the "half-timer," and night-school problems; in later life the conditions of labour, the dynamics of food and the minimum wage, the how and the why of premature old age, the effects of degrading and stupefying labour, and the time incidence of old-age pensions; factory inspection, with estimates of the effects of particular trades, such as chemical works, mining of all kinds, metal grinding, and so forth, with their consequences and pecuniary compensations; and more broadly, the large problems of "eugenics," of housing, of home life, of ventilation, of water-supplies, sewage and rivers pollution, food markets, and the adulteration in England so rampant, and, furthermore, those amenities of life, especially in cities, which by their play upon the receptive organs of the mind, make for the temperance and harmony which are essential to health and function. Such, in the sphere of the normal, are a few glimpses of the functions of modern medicine.

If now we turn from the normal to the abnormal, we may as rapidly note the survey not only of the tides of epidemic diseases in the largest sense of man, animals, and plants, but also of the more chronic but no less mischievous diseases which in large degree depend upon defect or vitiation of the conditions of social life; the proclivity to reversion and degeneration which is the shadow of evolution; the prevention and treatment of feeble-mindedness and insanity, which after mountainous waste of means is hardly begun; the great problems of hospitals and sick asylums; the urgent problem of a provision for medical and surgical treatment for large classes above the very poor, upon whom long and costly illness falls with a crushing weight and by whom in any case the consummate therapeutical apparatus of hospital charity are unattainable; the working of the Poor-law; the campaign against drunkenness, fornication, and other venomous social vices; and thence to criminology and punishment, to toxicological and expert medical testimony, to the anomalies of coroner's courts which in the crudity of their procedure would seem to exist rather for the destruction than for the corroboration of evidence; and finally, to the antiquated and distrusted dogmas of the judges of the higher courts on responsibility before the law.

Now this is the baldest of sketches, yet does it not indicate that modern medicine is embracing not indeed the final purposes and issues but the springs and conditions of national and universal life and efficiency; yet while the central administration remains as acephalous as the peripheral parts are multifarious and incoördinate, can we wonder that ignorance, confusion, and vacillation still prevail? The medical officer of health is at the mercy of the caprices of any interested clique; his sphere is undefined, he has neither protection nor freedom. In the service there is no order of promotion, no assurance of pension. Thwarted in detail, and in no public coöperation with a consolidated service, he is apt to lose standards, to lose efficiency, and to lose heart. Without an organised State department, public medicine lacks the corporate sense of a great official body like the law, and the stability of the coherent social groups which are favoured by natural selection. Moreover, being human, its partial conceptions, cross purposes, and pedantries are thus unmodified; and its naturally strong positions are not fortified against lay criticism; so that the public does not feel at home with medical ideas and practices. Working behind the scenes it loses the discipline and the chastisement, as well as the honour of public responsibility; while in the words of the President of the Royal College of Physicians of London,[2] "the State thrusts upon us responsibilities which are not ours." Unrepresented by a Minister of its own in Parliament, by alien Ministers it is alternately used and betrayed; and in silence must submit to hear its motives misinterpreted, its methods mishandled, and its unrequited labours continually imposed upon.

To one more factor of medical organisation I can but allude, although it lies at the root—I allude to the making of knowledge, knowledge of all national stores the most precious, in spite of the overlords of society who, as I have said, cling still to a belief in the efficacy of ignorance and delay. Grave towards us as are the faults of the Local Government Board, we must gladly admit that in this department some research is fostered. It is clear that there must be administrative laboratories and that without the atmosphere of disinterested research the best laboratories must flag; still it is open to inquiry how far the State shall make knowledge for itself and how far it shall derive it from universities and other scientific bodies. But when, for science or for art, money is wanted we learn that we are the poorest nation in the civilised world.

What are we to propose, then, in reform of the services of public medicine? It is understood that in high quarters the desire is to begin with the chaotic and inefficient periphery, in the hope that, secondarily, evolution may reach, recreate, and coördinate the subcentres and the main centre. It is urged also that each department must have its own medical bureau for its own continuous guidance and instruction. Again, there is the conventional dread of medicine as

[2] THE LANCET, Oct. 5th, 1907, p. 945.

of all irresistible knowledge; and a proneness to the sinister device of "*Divide et impera.*" Moreover, the English public has a wholesome dislike to the multiplication of officials; but by organisation the number of officials at any moment would be diminished rather than multiplied. It is true that each department would still need its own standing medical counsel as it has its standing legal counsel; but how far more valuable would such a counsellor be when speaking from the consolidated opinion of a corporate and disciplined medical Ministry than as an isolated medical colleague expressing no more than individual opinions. The crying need of reform in the separate peripheral areas must be freely admitted; and Dr. Bushnell[3] is correct in attributing to me an "apprehension of harm in excessive or premature centralisation, lest the central machinery be too powerful for the peripheral equipment." But, on the other hand, without parallel development, coördination, and distinction of central powers, how are local authorities and local medical officers, in all the far-reaching and various departments of national function now being intrusted to them, to derive their instructions and judgment, to command attention, to be supported in their legitimate functions, to be furnished with knowledge, and to be inspired with earnestness and devotion to duty?

CLINICAL PROFESSORS.

In passing now from hospital and public medicine to the school, I would congratulate this University on the recent appointment of responsible professors of medicine. The rich services and the accomplished staffs of the London hospitals fall far short of their potential capacity because in this respect everybody's business is nobody's business. By general report, by the uneven quality of the clinical training of Cambridge students in London, and by personal comparison of the services in great continental hospitals, or, indeed, of Edinburgh Infirmary as it was in the days of Begbie and Stewart when I knew it best, and as no doubt it is still to-day, I note in foundations so magnificent as the half dozen chief London hospitals that their defect of responsible clinical professors results in grave shortcomings. The apprenticeship system died out and no other methodical system took its place. Admirable are the gifts, devoted are the sacrifices of individual physicians and surgeons, and by such virtues this member of the staff or that gathers for a time a fairly regular class about him; yet he is but an unpaid or ill-paid volunteer, whose personal and private interests must be his chief consideration. None of the senior staff is invested with specific duties or responsibilities. Thus as a whole the teaching is without system, without concentration, without definite standards. At the best it is a procession of brilliant episodes; in the mean it is casual drills under no commanding officer. Where in these great hospitals do we find, as in France and Germany, a clinical professor of experience no less ripe, of repute no less eminent, devoting the best of his golden hours to the hospital; making and controlling his assistants, and guiding his classes in research, working out leisurely his own problems before their eyes? In our visits to great English hospitals do we not see more frequently the great physician or surgeon flitting rapidly from bed to bed, hemmed in by a crowd of foreign admirers, dropping indeed as he goes pearls of wisdom, but educating nobody? His seed thoughts we pick up thankfully, but still we want also the curious, the leisurely, responsible professional teacher, such professors as you fortunately now possess in those eminent physicians Dr. Graham Steell and Dr. George R. Murray.

MEDICAL STUDIES.

Although in my little book on "Professional Education"[4] I have dwelt at some length on medical studies, yet the present occasion and the recent discussion at Sheffield seem to call for some reiteration of opinions for which hitherto I have obtained more attention outside our profession than within it. I hope it is a pardonable conceit on my part to surmise that, had they been noted at Sheffield, the discussion would have moved toward clearer issues and led to more definite conclusions. To-day I can but touch upon the central problem, the evasion of which at Sheffield gave an arbitrary character to what might have been a very important debate—namely, *the relation of university to technical study.* When directly challenged, all competent observers admit that education does partake of these several qualities; and that however commingled in practice, however conflicting, the virtue and functions of each must be discriminated, valued, and compared. Moreover, it is generally admitted that as university education, looking as it does to the man and to the future, is apt to be thrust aside for technical equipment which is for immediate gain, the cause of individual development and future knowledge should be the more jealously guarded. Forgive me if under limits of time I put the matter bluntly. A father says, "I can spare neither the time nor the money to give my son a university education, in the proper sense; indeed, I am not sure that I desire it; I do desire to make a special workman of him, and as soon as possible; all beyond this may bring in no more than its own reward. Yet, as many universities have been granting medical degrees on diploma standards, and for training no more than technical, these degrees have become an indispensable business asset; consequently my son must have the stamp, not as a mark of a liberal education, about which I am not now concerning myself, but to testify to good average technical attainments. Specifically I mean that every candidate, competently instructed in the art and mystery of medicine, must be furnished with an M.D. degree." This is the idea now prevailing in our profession and the claim is a serious one; perhaps, in the tangle of these matters, irresistible. At any rate, as things are, it has my sincere sympathy.

There is, however, no inconsiderable part of our profession which goes not quite so far. This party, while still regarding the curriculum as narrowly from the technical point of view, would, however, hold back the university degree for a minority of candidates who have distended their minds with a bigger content; though still of technical stuff. With this party I have less sympathy, little or none. If for mere technical instruction the world compels us to give the seal of a university—that seal which ought to attest a disinterested education, aiming chiefly at the making of the man himself—well, we have the recognised excuse of duress. For in the past technical medicine has edged its way into the machinery of the universities as no other technical instruction has done. Save in this anomalous case of medicine, universities have never regarded themselves as engines for the manufacture of professional men as such. The parson is made in the seminary and the parish, the lawyer in chambers and court, the soldier in the field, the engineer in the workshop, and so on. To none of these does the university give the seal of practical competency; it testifies to the individual development only. By this anomaly in medicine our conception of a liberal education has been so warped, or at any rate so confused, that university degrees on diploma standards may be inevitable. But, I repeat, I can feel no sympathy with the party which, by withholding the degree until as much of this erroneous conception as possible may be accumulated, would give our principles away more completely and force the universities to the manufacture of pedants. For the more intense the specialism the deeper and broader must be the universal foundation. The function of the university is to make the man; and if the man be but half made—I am speaking, of course, of the average student, not of the genius who makes himself—the greater burden upon his back serves only to exhibit the slightness of his frame. A technical instruction cannot by mere length and toughness become a liberal education; yet herein the Sheffield discussion reminded me of the old comparison between rheumatism and gout: turn the thumbscrew till the pain is intolerable and you have rheumatism; give it another turn or two and you have gout. So with study: by turning the screw beyond the already exacting pressure of the medical schools we are to carry the technical into a university education. Wince from the truth as we may, a liberal or university education is primarily of different scope, and means a different method and course, not at the end of the curriculum but from the beginning; the professional school, however exacting, educates the average physician not otherwise than the clerical seminary educates the average clergyman.

But, it may be urged, if we can entrust a university with our technical training, and can set a hospital in the middle of it, shall we not get the best of both worlds? Will not universal methods and scholarly standards mould the technical methods on lines which, if not as generous as could be wished, may yet be fairly ample? Can

[3] Brit. Med. Jour., August 24th, 1908.
[4] Published by Messrs. Macmillan, 1906.

we not by levelling down university standards and forcing up technical machinery attain a certain efficacious mean? Now it is a little irksome to me to contest this proposition, for in former addresses, before audiences too much wedded to abstract academic methods and prone to edge away from concrete processes, processes which no laboratory ingenuity can imitate or even conceive, I have urged that, Antæus-like, knowledge must continually be recharged by earth contacts. Universities are no longer to be the cloisters of subtle and fastidious persons, observing the wind, and all a little afraid of each other. Albeit this return to the realities of life is not to be for the accommodation of mean positions but for the achievement of still wider knowledge. The mean position, as social history tells us and as biologists are illustrating, is a position not of advance, not of growth, but of retrogression. As Professor E. H. Starling said, we cannot get a quart into a pint pot; but by these measures I would figure, not the potential capacity of the student, but the stricter capacities of our respective methods. Not by any shift can a pint method be dilated into a quart method; the pot may be filled to the pint peg only, if no more can be afforded, but if it is to hold a quart it must be designed on the lines of the quart from the commencement.

There is no escape then from the unpalatable truth that if a liberal education, the education of a university, the making of the man, is to preside over the making of the particular professional man he must pay the price. Be the technical call for time such as it may—five years, say, or six—if the original capacity of the individual is to be brought out, if his personality is to be developed before, and also hand in hand with, his adaptation as a special instrument, some enlargement of time and opportunity has to be given and paid for. Narrow circumstances may deny it to him, they deny us many excellent things; but in this case the average man will never fully find himself, he will be designed as a receptacle and a retailer, and on the lines not of a progressive but of a stationary practitioner.

CONCERT OF METHODS.

Happily, however, with some mutual adjustments, the creative and the instrumental methods may be combined and the double price in time and money reduced. If the function of a university is to be the maker of the man as a whole, it cannot properly be made responsible for his technical efficiency as a practising lawyer, a practising parson, a practising physician; as a soldier or an engineer in the field. Nevertheless, theology, law, medicine, military history, engineering, and the like are taught in universities, and herein it is that university ideas and the hard-pressed student and his guardian may approach each other. For to develop the individual faculties, and to create the man, almost any subjects can be used if they are used thus as universals; not as particular equipments, not as furniture, but as disinterested means of unfolding the secret powers of the mind. Yet it is at this very crux that Professor Starling would desert us. If I read him aright he would, while in the university, curtail these convenient studies from educational to instrumental purposes, thus neutralising the very principles on which an accommodation between liberal and technical ideals is practicable. For instance of anatomy, the university, on his suggestion, is no longer to teach anatomy as a means of culture—a disinterested anatomy, to awaken and develop the general faculty of exact observation, and to imbue the mind with broad morphological and genetic principles, but, instead of this disinterested study, sections useful to the future craftsman are to be extracted; neglecting the development of faculty we are to confine ourselves to the inculcation of immediately useful parcels. This is indeed to shape the instrument before we have forged the steel. I have never forgotten the day when Humphry put a bone into my hand and revealed to me as an undeveloped youth what scientific observation meant; it meant not just points for the surgeon, for surgery then formed little or no part of the Cambridge curriculum, but a training of faculty, whether for the physician, the naturalist, the physicist, the palæographer; in a word, for universal education. Thus one realises how carelessly the untrained eye skips its reading; had I been told to note only what I might happen for some practical purpose to want, and to skip the rest, the eye would have fluttered unchastised over many a tiny point, which afterwards, when the mind had been raised to the conception of principles, would have revealed itself as an "expression point," significant of cycles or deviations of growth which otherwise had left no trace. "To look with the eye confounds the wisdom of ages." Moreover, in the unforeseen future, as, for instance, in the field of modern neurology, it is the anatomical habit of mind, apart from the memory of details, which in great part gives his lead to the successful observer in new spheres of observation. Such in anatomy is a part of the contrast between universal and technical methods, but such also are the potentialities which enable us to use almost any department of knowledge for an education of universal quality.

Secondly, if time be gained thus, we shall find other gains also at a later stage. The maturer and more various the qualities the mind brings to bear, the more quickly and truly will it judge of what is to come before it later. The teacher's ideas have not to dwindle into the dimensions of a rudimentary disciple. The technical instruction, which it is his turn to give, falls upon a mind already familiar with standards, with principles, with relative values; a mind accustomed to observation, comparison, and foresight. Moreover, among themselves, such educated students do not, as those who are only of the workshop, operate upon each other at low levels, but they stimulate each other with spontaneous inquiry and critical judgment. In this search after truth their minds have found themselves, and this search is the path of life: they have that awakened sense of our ignorance which forbids us any satisfaction in phrases and conventions; which tells us that none of our axioms is true, though truer than an indolent or gregarious assent, and guards us against the domination of the many positive persons who do not know but only assert; such as the historian of whom Acton said that "a little study of the subject would probably diminish the severity of his judgment and add materially to its weight." For students thus educated technical attainment is greatly accelerated.

Thirdly, we may gain time for an enlarged curriculum by requiring more of the secondary schools, and by encouraging our students to come up a little younger. At Cambridge we have decided to offer the First M.B. examination to candidates on entrance, so that with us they may proceed at once to more advanced subjects. In the Sheffield discussion Dr. Dawson Turner was jealous lest thus the literary side should be starved; I find but little of a literary side to starve, but in any case may we not have an equal jealousy of the literary schoolboy starved of science! The elements of science required for our First M.B. are of the kind which should enter into the formation of every educated man.

Much, then, may be done, by preparation, by consolidation, and by adaptation, to fit together university and technical education; but no consolidation, no contrivance, can make them identical or equivalent. Whatsoever may be the time prescribed by the Medical Council for qualification, the student who desires to build up his faculties by a more universal training must add a year or two to the technical minimum, and this from the beginning of his course. It cannot be tacked on at the end of it.

Is it not, then, deeply to be regretted that a great Lancashire merchant, a man of energy and powerful in material progress, should use his influence to declare that "a university education retards a young man's progress in commercial life, by occupying years in the study of classical and other subjects when commercial training would be more valuable." Now he must be a very dull or a very complacent observer who supposes our modern industrial civilisation to be hitherto a great success; still what an abasement, surely an unmerited abasement, to suggest of commerce, for which ancient calling this and other universities are now giving new opportunities, that it is all trivial; that it is incapable of principles, of high standards, and has no uses for an education which stores the mind with liberal knowledge and opens it to new and various ideas. We have seen that a disinterested building up of mental faculty is not a matter of this study against that, whether of literature, of social and commercial economy, of physical science, of history, and so forth, but of the larger manner of its handling; that university training does not consist in decorative accomplishment, nor in disdain of common things, but in an openness and a flexibility of mind to new issues, in the spirit brought to the study of everything; for although in nature nothing is common, no

thing is smaller than another, to the small mind everything is insignificant. Herein the American surpasses the English plutocrat; he sees beyond the counter, he has faith in the best knowledge in every field; we have not this salvation. Let me contrast with such complacency the words of an even more considerable teacher: "You are citizens of the great and mighty city of Athens (a city by the way mightier than any of ours); are you not ashamed of heaping up the greatest amount of money and honour and reputation, and caring so little about wisdom and truth, and the greatest improvement of the soul which you never regard or heed at all?" German commerce is teaching us the bitter lesson that even in his own material field your "practical man" over-reaches himself; that his "good workman" is unable to investigate even practical problems, to appreciate the discoveries of others, or to teach his apprentices. If he is to transform human energies into the best material results the practical man must have the best kinds of minds at his service; not merely the handy man, sharp and resourceful in common emergencies, but of no insight and no horizons.

PORTAL OF QUALIFICATION.

If then a university degree is to be exacted for utilitarian teaching which, as it is to occupy only the time officially prescribed for a diploma, cannot attain to university standards, we shall lose sight of the first principles of all education and barter away the foundation of medicine herself and of all progressive knowledge. It has been, however, as I have said, a part of the anomaly of university medicine that for this profession universities have been endowed, or shall I say "saddled," with the duty and responsibility of qualification for practice; a concern which, as we have seen, is none of theirs, or is theirs only in common with society at large. By the establishment of one portal to the Register the State will, I trust, soon relieve us of this alien burden and of the duty of tests no less alien to our best purposes. At Cambridge, indeed, I consider that to impose upon those of our M.B.-B.C. candidates who are already on the Register, as are some 75 per cent. of them, a repetition of these diploma tests, is not only otiose but a grave evil; it prolongs what Professor Starling well calls the "stuffing" period, the period during which the candidate denies himself the wards that he may sit in his lodgings with a teapot, and a wet towel about his brow, fagging up handbooks. The contents of these, in dilute solutions or on sheets divided into opposite columns of neatly docketed cram, he retails to us over again at Cambridge. Now many of these candidates, as later we find by their M.B. theses, we really had led to think for themselves; yet in a qualifying examination they dared not venture to betray it. Occasionally an audacious spirit may enter a timid demur to current doctrine or phrase, and if so, from me at any rate, he obtains a good mark, whether his demur be justifiable or not. But, if I exclude the few riper students who give more time to the university, I can hardly recollect a paper in medicine in which a candidate broke away from conventional notions and sheepish assent. Man by man and year by year, their papers are as conventional and as flat as willow-pattern plates.

TESTS OF METHODS.

But it may be urged, are not these remonstrances rather fanciful, rather academic, counsels too rare for a common world! Well, we will try, as the children say, to prove our sum. We must go beyond these tests of current doctrine and common formulas, of the capacity of swallow and regurgitation by which our examination candidates regularly amaze us. We shall seek a test not of the volume but of the design of the candidate's work, of the power and quality of the human organ we profess to have built; of the personal character informing his notions. We shall mark whether his argument signifies that his ideas were spun in his own loom, or are all warehouse goods; and if in the accuracy and lucidity of his language he betrays a precision and balance of thought. We shall note as highly significant such fresh observations and ideas as offer themselves on all sides to the developed intelligence, the quickened eye, and the arm which has learned to know the quarry and handle the pick.

Whether the qualities of the university graduate are as remarkable as they should be in current medical writing it might be ungracious at present to inquire; and I must not assume the truth of the recent complaints that English Bachelors of Science, when they visit Germany, are found to be trained so much on books and laboratory clerking, and so little on personal initiative, that their education has to be recommenced on better lines; I must then confine myself to one, but this a definite, test. At Cambridge, before an M.B. candidate can receive his degree, he must prove to us that, however well "stuffed" a pupil, he is able also to show that he is not a mere mouthpiece, but in some reasonable measure has developed and realised his own personality. Before he is admitted to graduation he must show us not only how much he can repeat, but hidden under the pile of his tasks and cram he must also discover himself. Plaintively as at first he may protest that he has nothing "original" about him, he has none the less to set to work on some piece of research—when to his surprise and pleasure he usually finds out that we had made a thinking and even a creative being of him after all, and on this discovery he goes into practice a different man. But this research work for the M.B. is unfortunately the boon only of Cambridge men. I have therefore to seek my test in the M.D. exercises, where, if at all, lies the test of personal construction as contrasted with borrowed furniture. The M.D. candidate is too old for examination and he should be too good for a test so coarse. Therefore, every university, perhaps all universities, began by making the M.D. dissertation the chief test of its peculiar influence, of its formative discipline, of its power of developing the mind as compared with mere schooling. Yet what are we witnessing to-day? That even this one test, the one test of the quality of the university itself, as well as of its progeny, is being quietly evaded. On inquiry I find that now of the M.D.'s of the London University scarcely more than 10 per cent. give evidence of this or any such developed and ripened faculty; and it is whispered to me that on this same path even Victoria is a backslider. Yet is not this not only to relinquish all interest in the higher qualities of our students, but also tacitly to shrink from the wholesome test whether a university has justified itself as such, or, under whatever duress, is allowing itself to be dragged down to the place of a mere technical school? This can but mean stationary pupils, and stationary pupils make stationary teachers; if a university is to become an organ of life and discovery it must begin and end by making research compulsory all round. Research must as surely be implied in the earliest stages of the teaching, as actively developed and testified in the later.

REASON, IMAGINATION, AND LIFE.

And now, in conclusion, may I turn myself for a moment to the young men entering into or crossing the threshold of medicine. You have heard me insisting upon the power of knowledge, you have heard me resenting that worst part of ignorance, the conceit of knowing what we do not know, and the inveterate habit of calling opinions "facts"; you have heard me lamenting the English fatuity of disregarding causes to throw all our energies into mopping up their consequences; and you may begin to accuse me of the creed of the Jew of Malta, "I count religion but a childish toy, and hold there is no sin but ignorance." Far indeed from me be any such counsel! I agree that a man's overbeliefs are the most interesting thing about him. I bear in mind Carlyle's judgment on one who "had a great deal of unwise intellect." I see that the lower the idea the easier it is to formulate it; so that in our satisfaction with the solidity of our foundations we are prone to forget the superstructure for which ethical and imaginative insight must also be enlarged and illuminated. For if in logic we distinguish these endowments, if indeed in practice some may be nursed to the starvation of others, yet in the fulness of life they make each other, interpenetrate each other, and are bonded together. If then, limited by our prejudices or wearied by the quarrels of sects, we divide them in the mimic life of education, if we constrain our schools and universities to force intellect to the impoverishment of ethical and imaginative faculties, or even to nurse them in separate compartments, evil rather than good will ensue.

> "My brain I'll prove the female to my soul,
> My soul the father."

In the everyday world we observe, even in persons of moderate parts, that character, consisting in a high idea of duty, in an intuitive perception of the essential and a sense of relative values, a generous sympathy with various human

experience, may ripen into a kind of intellectual power. And if we ask how this may be the answer is not very remote. The zone of our intensest life is not in the individual alone, nor again in the universe alone, but in the weaving edge between them. The tissue, as on the personal side it is wrought, we have to guard from decay; but the weavers' vision and hand, by an intuitive gift of insight and touch beyond common reckoning, are swiftly conceiving the pattern and designing the web. As Professor James says, "ideal impulses possess us in a most unaccountable way, and work gets done." Thus after his fashion every man of action, even the man of science, is an artist; it is by imaginative vision that he gives birth to the new ideas, which he then compares and approves by intellectual judgment. We know in part and we prophesy in part. This zone or phantom verge of intensest vital activity, this halo of creative life between the individual and his *milieu*, in ethics is faith and hope; in work is purpose and enthusiasm; in art is creation; in science is that spirit of research which is confined to no laboratory but sees in every patient a new problem for interpretation and succour.

Your beliefs then are integral constituents of your lives, and are your driving power. For with duty or values, or even with ends, the equal eye of science has no concern. And if any one of you thinks he has no belief he lies in grievous error. Consciously or not, each one of you is harbouring his own ideal of life, good or bad, and is living by it; if the moth gets into it your character will decay with it, and so will your influence on others. Mark then, day by day, the order of your springs of action, that your hearts may be lifted up, and the continuity between will and action quickened and knit together. We have seen that to progress we must be living above the mean position; and as modern philosophy postulates that our several worlds are not outside us but within us, and are what we are, we realise that the world is what we make it; and that our maturer responsibilities cannot be ordered by any external authority. In the words of an accomplished author, Miss Mary Cholmondeley (I forget in which of her interesting stories): "How many rush hither and thither, and wear down the patience of earnest counsellors, and all the best years of their own lives in fretting and scratching among ruins for the law by which they may live! They look for it in books, in the minds of friends, in the face of Nature who betrays in her eyes the knowledge of the secret but utters it not. And last of all a remnant of the many look into their own hearts, where the great law of life has been hidden from the beginning."

For the pattern and governance of your daily lives I am thankful to say that in our own profession you will find a true and helpful example. Conversant during a long life with the homes of medical men I have felt rebuked again and again by their devotion to duty, their peerless generosity, their self-respect, and simplicity of manners. Faultless we are not, as more than once I have dared to say. Besides the temptations common to all men we have temptations peculiar to ourselves. Our patients, loyal and grateful as most of them are, disappoint us at times, and these disappointments may be very galling. In these days of rather aimless unrest they are too apt to forget the importance of continuity of observation and treatment. The consultant gives counsel indeed, but upon the family physician, who knows the whole story and sees the daily strains, depend the patience, the vigilance, and the discrimination needed to compass the cure. Yet too often, and perhaps by a tea-table cabal at a critical time, the patient is whisked off to some "specialist" who has an Installation, an Institution, a Home, or a Spa, which has to be kept agoing —*recte si possit!* And to the patient life is very dear; his judgment is enfeebled by illness and care; he clutches at any fair promise of aid; and the physician must remember that he also is human and that when ill himself he is apt to run hither and thither quite as inconstantly.

And are we not more to blame when our imaginations, kindly for others, stop a little short of our own brethren; when we are not quick to put ourselves in the place of him whom we are unhappily wont to designate not by the word of brother, but of "opponent"? Now words sink into our minds like stones. The relations of medical men in small societies are delicate, and with the best intentions misunderstandings are apt to arise, and to be aggravated by busybodies. If, indeed, our medical neighbour be not very fraternal, not always perhaps very high-minded, we must remember that herein lies one of our special temptations; and, if only for our own happiness and peace of mind, we must be a little blind to his faults and endeavour by our conduct to bring out not the worse but the better part of him. There is more awkwardness in these matters than malevolence, and there is nothing high-minded in being quick to take offence.

You may be tempted to say that it is all very well for me at my time of life thus to pose as your philosopher, and to set before you intellectual and moral ideals which you cannot hope in this rough and tumble world to attain. But to hitch our wagons to a star is not to reckon on camping in it at nightfall. An ancient sage has told us: "In magnis et voluisse sat est"; a modern poet puts it: "It is not what I was but what I aspired to be which comforts me"; or, as we say in our strong northern vernacular: "He did his best, and he couldn't do nowt else."

Abstracts
OF
INTRODUCTORY ADDRESSES, ETC.
DELIVERED AT THE
MEDICAL SCHOOLS
AT THE
Opening of the Session 1908-09.

ST. GEORGE'S HOSPITAL.

INTRODUCTORY ADDRESS BY CHARLES SLATER, M.A., M.B. CANTAB., SUPERINTENDENT OF THE CLINICAL LABORATORIES, AND LECTURER ON BACTERIOLOGY.

Dr. Slater, who took for his subject "The Laboratory in Medical Education and Practice," first acknowledged the tribute which had been paid to the laboratory in his selection as opening lecturer, and welcomed the newly joined students "to a school with great traditions—traditions centring round the names of Hunter, Young, and Jenner—carried down through Brodie, Hewitt, Holmes, and our own teachers." He then proceeded to outline the great advance which had been made in the last 30 years in laboratory methods in connexion with clinical and preventive medicine, especially in the development of the science of bacteriolgy. He continued: "During this period the education of the public in a knowledge of these advances and in an appreciation of the advantages to be gained from them has progressed. Many of the discoveries and their applications have yielded picturesque if inaccurate copy to the lay press and have been eagerly seized upon. Mr. Balfour in a recent visit to this hospital remarked on the comparative simplicity of the task of the defenders of vivisection before the Royal Commission then sitting to consider this question compared to the similar task in the time of the earlier Commission which he recalled; a simplicity due to the array of striking illustrations of the advantages gained by these methods, and capable of appreciation by the layman, which could be adduced from the discoveries in connexion with antitoxin and other remedies and methods of treatment. The real education of the public in science is to be welcomed by the medical profession as it emancipates them from what Dr. W. Ewart has called the thraldom of the phial—the dominion of the quack—and makes them ready to appreciate, not by lip service merely, the connexion between cause and effect. At the same time it makes them more critical of methods and explanations—and as to how much do we still lack explanation—and will undoubtedly drive upwards the standard of general and professional education required of the members of our profession. During this period, then, the scientific basis of medicine has grown with phenomenal rapidity and this tree of knowledge has pushed out from its stem of physiology and anatomy such numerous and wide-spreading branches in experimental pathology that it has tended to overshadow the clinical side of medicine and has affected the medical schools, the medical education of the student both in its earlier, later, and post-graduate stages, and

finally the practitioner into whose daily routine its influence has crept and whose future it will certainly mould." Dr. Slater proceeded to give an account of the evolution of laboratory training and equipment which has taken place in St. George's Hospital of recent years. This led him to a consideration of the causes which induced its medical school to give up the teaching of the "preliminary and intermediate" subjects of the medical curriculum, a decision to which he felt sure other London schools would be driven sooner or later. In support of this contention he gave a very able and comprehensive summary of the present unfortunate position of medical education in London, of the severe competition for students of provincial universities, and of the unfortunate disagreements which have led to the handing back by the University of London of £70,000 to the would-be founders of a Central Institute of Medical Sciences. He deprecated the rapid increase in licensing bodies and advocated strongly the introduction of a "one-portal" system of qualification, and the bestowal of degrees by the Universities only upon State-qualified men. We regret not having space to report at length this part of Dr. Slater's address, but as the arguments which he used are known to most of our readers we have chosen the second part which dealt more especially with the scientific education of the medical student and the relationship of the laboratory to clinical medicine. After pointing out the advantages of a "one-portal" system, he proceeded:—

In addition to the modifications in medical education which either have been, or will be in the near future, forced upon us by financial difficulties due to the growth of science we have—and this is the factor of greatest importance to the student—the effect produced by the time taken by the scientific subjects which either lengthens the curriculum or robs the professional subjects of their due proportion of time. Probably none of the subjects introduced into the syllabus of medical studies, even that of the University of London, are, considered in the abstract, undesirable, but it is also desirable that the student should be able to get qualified before he is grey-headed. The time taken before a medical man is in a position to earn his living is already very long and cannot be lengthened without harm to the profession. It is not surprising, therefore, that at the present time the educational pruner is anxiously looking to see what branches may be cut back from the tree of scientific knowledge, both to render it more fruitful in itself and prevent it from crushing out other branches of learning which suffer from its overshadowing. Attempts have been made to meet the difficulty by ordaining that only so much and no more of the curriculum shall be spent on the preliminary and intermediate subjects. But this is a paper regulation—a Partington policy—you cannot stop the Atlantic of science with the mop of a syllabus. The minimum time before which a student may not go in for an examination may be fixed but if no reduction is made in the amount which has to be learned there is but little use in reducing the time in which the student is permitted to learn it. Whether the necessary alteration in the teaching and equally requisite alteration in the examination which would be required to make these regulations effective will be introduced seems in the light of the discussion at the British Medical Association somewhat doubtful. The methods advocated by the various speakers for shortening the time required always, when stripped of phrases, took the form of a cutting down the instruction in subjects other than that taught by the speaker. It is instructive to note that the practical result of the alteration of the University of London syllabus designed for this express purpose is to lengthen the curriculum by six months. It is said that as the examiners are generally medical men there would be no danger of examinations taking a form inimical to medicine. Experience shows that this is not the case, and it is especially in the scientific subjects of the curriculum, where the connexion between the teacher or examiner and medicine has never been close and tends more and more to widen, that the risk becomes most serious. The most important suggestions made in the discussion related to the teaching of science in the schools and to the teaching of the intermediate subjects not as pure sciences but as applied science—science in relation to medicine. All practical exercises and theoretical instructions were to be such as would be of service to the student in his profession. Possibly this could be done, though there would be grave risk of our giving that half-knowledge which is so great a danger in most systems of technical education and which is so useless if progress is to be made. Still there is no doubt room for economy of time in this direction. With regard to the elementary subjects chemistry and physics, these are well fitted for the educational purposes of the school; in them a standard might be reached which with some mechanism for the granting of school certificates such as those which free the undergraduate from his "Little-go" might enable the medical student to start his intermediate subjects at once.

With regard to the scientific teaching of the student in his later stages after the intermediate subjects have been disposed of there is less difficulty. The laboratory and the wards should go hand-in-hand. It is much easier to make the problems furnished by the ward subserve the purpose of the teacher of pathology and bacteriology; in fact, the problems of the ward are also those of the laboratory, the difference lies merely in the side from which they are attacked. If the exigencies of examinations would allow, and one of the latest changes in the Cambridge examination was designed for this end, the ideal course would be for the student to take a short practical and theoretical training in pathology and bacteriology—clinical pathology as it is sometimes called—fitting him to take advantage of his clinical instruction and enabling him to examine his cases by the simpler laboratory methods. During his later years after he has spent some time in the wards and acquired some clinical knowledge and has learnt what are the problems of the bedside, he should then return to a fuller course of pathology and a further practice based on ward work of the methods which are used in the solution of these problems. As a matter of fact, that is the way things have worked out here, though to a certain extent accidentally, and I think with satisfactory results. Professor W. Osler's contribution to the discussion to which I have already referred was concerned almost entirely with this stage of the student's education, and his recommendations are valuable though they quite ignore considerations both of time and expense. Among other desiderata he suggests well-equipped rooms in which men fresh from the laboratories of the school may be trained in the use of instruments of precision in practical medicine, and a good clinical laboratory attached to the hospital in which each senior student has his place and apparatus. As I have hinted, he also includes numerous and well-paid teachers and ample time. There is no doubt that the establishment of clinical laboratories—i.e., pathological laboratories used for the purposes of diagnosis and research—has much facilitated this side of the educational problem and has been the lifeboat which has saved the schools from financial storms which would have arisen in the strictly professional practical courses as they had done in the preliminary and intermediate subjects. It was possible quite legitimately to economise by utilising for the purposes of advanced study the resources of the clinical laboratories which the progress of medicine has compelled the hospitals to found and maintain. It was an economy in salaries and maintenance to both the hospital and medical school and the work carried on in such a laboratory is obviously of the highest educational value to the properly trained and equipped senior student or post-graduate worker. If such a laboratory is not utilised so fully as might be desired perhaps this is due to lack of money and time—time of the staff and of the student. There was a period when this happy solution of a difficult problem seemed in danger owing to the ill-advised action of a commission of the King's Hospital Fund, but the common sense of the public brushed aside difficulties raised as to the use of hospital funds for school purposes when it was shown that the hospitals gained by the arrangement and that to veto this action would have been very bad economy. With us at St. George's the necessary hospital service has been provided by organising the pathological, chemical, and bacteriological laboratories with their staffs, together with the curator's department into a clinical department with arrangements for recording and correlating the work of the individual laboratories and for linking these by means of the registrars with the wards. It is in keeping touch with the clinician—in what might be styled the intelligence department—that the chief difficulties are met with in combining what tend to be isolated observations so as to subserve the purposes of true scientific advance.

The rise of preventive pathology and its development into preventive medicine during the past 30 years has naturally

had considerable influence on the practitioner. This period has seen the public health services—the department of State medicine, the sanitary departments of the Services both military and colonial—become firmly established. There is no doubt that there will be further increase in this direction, a development of the medical officer at the expense of the general practitioner. As Dr. Ewart has so well expressed it, the profession is dividing itself into two uneven sections, that of practice and that of research. The latter works unpaid for the gain of the State and against that of the profession. There is a well-known warning as to the fate of a kingdom divided against itself. If the profession carefully watches the State, however, the effect will be to produce a *redistribution* rather than a *diminution* of the sources of emolument. The recent establishment of the system of school inspection of children has created a small army of officials and the introduction of a definite course of hygiene in the training of school board teachers must call for medical instructors. The present is not a bad time for the young medical man; the pinch comes in the later stages when promotion to the small number of higher posts becomes slow or ceases. Again to quote Dr. Ewart, the State has always gladly exploited the medical profession, and it behoves us to see that it does not develop its vicarious charity too greatly at our expense. The danger is not small. The public and the State have been accustomed to pay for cure and have not yet learned that it is much better to pay for prevention—they have yet to learn that to reduce the incidence of disease is worth a hundredfold more, expressed in hard cash, than the cure of the cases. We have to teach the public and public officials this. It has always been easier to get grants for the prevention of animal disease than for the prevention of disease in man because it has been possible to express the loss to the community in money terms. The State blinked at what Carlyle calls the cash nexus in the case of man on grounds of false sentimentality. But this same cash nexus is producing its effect on the insurance companies in regard to the prevention of tuberculosis and the support of sanatoriums. At present, however, the attitude of the official mind on learning of the reduction of a disease, as, for instance, the reduction of cases of enteric fever in the Indian army by 20 per cent. by our now highly trained army medical service, is to regard this as a chance to retrench the official or to diminish the special subsidies by which the improvement has been effected, regardless of the fact that the money expended, multiplied by the brains, has produced a hundredfold. It will be hard to root out this attitude from the official mind, even by the efforts of what I recently heard a distinguished surgeon speak of—without irony apparently—as our "powerful profession." It should be powerful, but I fancy the Cabinet Minister who was present and was engaged in this policy of exploitation smiled at this amiable delusion. However, thanks to the better organisation of the profession and to the better education of the official and the politician this abuse of the medical man will diminish steadily.

This growth of the official side of medicine has a secondary effect in prolonging the period of education and creating the compulsory attendance on what are practically courses of post-graduate teaching. The need for a diploma of public health is rapidly becoming a necessity for successful candidature for many appointments. The diploma may not actually be demanded, but a candidate who possesses it has such an advantage over his competitors that its absence is a barrier to employment. So far as this demand postpones the already long-deferred earning period of the medical man it is serious, but it must be recognised that medical education cannot stop at the qualification stage but must more and more involve post-graduate courses, and the work for the public health diploma is both valuable and interesting and not divorced from pure medicine. But ordinary medical practice has also become interpenetrated by the influence of the laboratory owing to the constant need for the latter's aid in diagnosis. The causes which led to the necessity for clinical laboratories in connexion with hospitals led to the provision of similar institutions in connexion with the sanitary services of towns and rural districts and to meet the requirements of the general practitioner. Some of these were official or semi-official and others were frankly commercial, founded, as the phrase is, to meet a much-felt want. Skilled as the modern qualified man may be in the use of scientific methods of diagnosis, the exigencies of practice, the want of time, the want of special apparatus, and a thousand other things make it advisable, if not absolutely necessary, for him to seek the aid of the laboratories of clinical research. The success of a method of investigation depends not only on the knowledge of the worker but on the technical skill gained by constant practice—a practice which must be very intermittent in the course of active professional work. But it is useless to insist on this point as the need is practically admitted, and the parcel of bottles, swabs, and blood tubes is as much a part of the physician's or surgeon's armamentaria as the stethoscope or the sterilised dressing. Every day adds a new method and a new direction in which the pathologist can aid the practitioner. The latest direction in which this aid may be furnished is in the diagnosis of syphilis in its early and late stages, and what would be of great importance should it prove possible, the determination when cure has been effected. It has been used to a considerable extent in Germany, but as yet but few observations have been reported in England. It is of interest from the scientific side as it does not depend upon the discovery of the spirochæta but on a method founded on a theoretical conception, the deviation of complement which a short time ago would have appeared wholly unconnected with any practical applications.

Now what is the kind of relationship which has existed or is to exist between the clinical laboratory and those who employ its service? Is that relationship to be one of pure commerce or a relationship of mutual help in solving a difficult problem? Are we to be merchants or scientific workers? You can make the relationship which you like, but the value of the aid you get will be very different. I would first put it as an appeal *ad misericordiam*. Have you ever realised what a soul-destroying industry it becomes to examine sputa, throat swabs, or urine without a word as to clinical details? Is it a wonder if this work is left in the hand of the assistant? It is only when the examination of the pathological product can be co-related with the clinical condition that we escape from commerce and get results of scientific importance. I know of one laboratory where it is an absolute rule that if the papers accompanying the request for an examination are not filled in with the clinical details asked for no report is sent; but it is not every laboratory the position of which is so secure or the finances of which are so sound that this position can be taken up. It is quite certain, however, that if we are to get the maximum benefit out of the laboratories, consultation between the clinician and the laboratory will have to be more resorted to. The financial difficulty, again, crops up, but I think it would soon prove that the pathologist's opinion based on a full knowledge of the problem was worth more than his report on an isolated specimen of morbid material. What is gained by trying to obtain an unbiassed report is far more than lost by the errors introduced by the want of information which would enable the pathologist to interpret his results and give a sound opinion. The old habit of setting pathological conundra to be guessed must be given up. At present, from one cause and another—all causes, however, which spring from lack of mutual consultation—a great many reports which are asked for and furnished are, and must be, useless, as the pathologist has never known what the clinician really wanted to learn, nor on the other hand has the latter discovered how the laboratory could best help him. I am far from undervaluing the difficulties which arise in this matter of mutual coöperation; a brief experience, and mine is now no longer brief, of the obstacles which arise as to a proper understanding between the laboratory and the clinician, even in a hospital where the conditions for such mutual help are most favourable, would soon dispel this delusion. There is always some natural hesitation in allowing the claims of a new class of specialist to enter into the crowded field of practice, and when these pretensions are pressed by one of the new class the argument may reasonably be regarded as not free from bias. The necessity of the consultant pathologist has, however, been recognised and his cause pleaded vigorously by Mr. A. W. Mayo Robson in a paper read before the Bristol Medical Society. At the recent meeting of the British Medical Association at Sheffield Dr. J. Kingston Fowler said: "The bacteriologist," and we need not confine it to him, "in some at least of the general hospitals is regarded as the servant of the physician who orders that certain investigations should be undertaken. This is not, I submit, the position to which he is entitled. In important cases in which his advice and

assistance are required he should consult on equal terms with the physician at the bedside, and the investigations to be made or the treatment to be adopted should be the joint result of their deliberations." This, to my mind, grants all, and more than all, that the pathologist desires. I say more than all, because Dr. Fowler includes the treatment to be adopted in the scope of the consultation. Now, advice as to the nature of the investigations to be undertaken and the conclusions to be drawn from the results is obviously within the province of the pathologist, but advice as to treatment seems to lie outside his functions except in so far as he is a medical man as well as a pathologist, and that possibly his work has made him specially qualified to speak with regard to some particular disease. I think Dr. Fowler had in his mind a much more serious competitor of the practitioner than the mere pathologist. I mean that recent product of laboratory specialism, the immunisator—the Frankenstein monster who has been described by its maker as sitting armed with syringe and phial of bacterial emulsion ready to inject all and sundry. There is no doubt that the demonstration of opsonins in the serum and the practical applications of methods for their estimation has had a very great influence on recent methods of diagnosis and has thrown much work on clinical laboratories. It is work of such a highly technical kind that it has inevitably passed out of the hands of the practitioner into the sphere of the laboratory. The further development, too, of vaccine treatment, developed on the basis of control by the estimation of the opsonic index, has thrown fresh work and fresh power on to the laboratory. Till lately the laboratory has been the handmaiden of the ward, but in this latest development in its present phase the balance has been reversed and the laboratory has become the preponderating partner and consultation has ceased to be merely desirable and has become necessary. It is possible, as Dr. Latham is attempting to show, that a clinical method of control may be substituted for the control by the opsonic index, but the vaccine method of treatment will still lie largely with the laboratory. It has been suggested that the immunisator is the physician of the future. A very small object will obscure the sun if held sufficiently near the eye, and it would seem to me that there is a want of perspective in this view. The physician is a product of the wards, not of the laboratory. All disease is not infective, nor are microbes the be-all and end-all of pathology—the ferment is already rising above the horizon and threatening the supremacy of the germ, and there are still regions where errors in cell metabolism play the principal rôle. It seems, however, that specialism will still further develop; there is no longer room for a Teufelsdrück as professor of things in general, and indeed I seem to see sooner or later the establishment of a still further branch, a kind of information bureau required to keep the specialists in touch amongst themselves and to counteract the present centrifugal forces. There is no doubt loss in these divisions, but they seem inevitable, and our efforts must be to make the loss as small as possible.

Of one aspect of the laboratory I have said nothing—its influence by research on progress. This, of course, is its highest function, its birthright which it must not exchange for a mess of pottage. I have said nothing because the advance made during the 30 years we have been considering is eloquent as to the quantity and the quality of the research work done and of the practical services which have been rendered by observations which seemed at one time to have but a theoretical interest. But this is the view of the man in the street—the theoretical interest is the important one, for it is on the thread of theory that the pearls of progress are strung. There is, however, room for ever more work in this direction, and I do not think the advantages of the hospital have yet been utilised to their fullest extent. It is difficult to imagine conditions more favourable for the solution of many problems of disease than those which obtain in a large hospital furnished with efficient laboratories, and willing workers. The stumbling-block has been the excess not the want of material, an excess which has meant that routine work has filled the day and left but scant time for investigation. It is the old difficulty of finance and the birthright bartered for the pottage. The liberality of the citizen in America and the enlightened statesmanship of continental governments have provided a way of escape which we seek with small hope in this country. Still, even here, commerce has not proved so blind or so parsimonious as our politicians. In what direction are we to look for advance. Some improvement may be made in the machinery of research and chiefly in mutual coöperation of workers, and the past few years have seen the development of collective investigation which in the case of cancer has become international. The line of scientific advance seems to lie in the regions of biochemistry which has been progressing steadily and without any sensational discoveries. The chemist was slow to rush to the attack of problems with which physiological chemistry did not fear to deal. Slowly during the period we have considered solid foundations were laid on which a sound superstructure of knowledge has been built, and the chemist, on the basis of synthetic methods, can now do much more than guess at the composition and constitution of complex organic substance and even of proteid itself. The prevailing theories of immunity are biochemical, and metabolism and function are explained on chemical lines. We have vision, too, of a modern therapeutics widely different from the empiricism of the past. The advances we have witnessed give us sure and certain hope of still more rapid advances in the future, and though we shall not live to see the abolition of disease and suffering, still we may each from our own Pisgah top catch glimpses of the promised land.

ST. MARY'S HOSPITAL.

INTRODUCTORY ADDRESS BY SIR JOHN F. H. BROADBENT, BART., M.D. OXON., F.R.C.P. LOND., PHYSICIAN IN CHARGE OF OUT-PATIENTS.

After a few words of welcome to new students Sir John Broadbent said: It is not the quantity of study or the amount of reading you get through which are important but concentration of the mind on the subject you are trying to master and the ability to make practical use of the knowledge you acquire. Some men will sit down in front of a book and read page after page, comforting themselves with the assurance that they do so many hours' reading a day, and yet when the time comes for them to put down on paper what they think they have learnt they fail dismally. Others may attend lectures and demonstrations and yet fail to pass examinations when the time comes. I believe that this is in many instances due to the fact that they do not make abstracts of the matter they read or take any notes at the lectures they attend. It is given to few to assimilate knowledge by mere abstract auditory and visual impressions, so much so that "in at one ear and out at the other" has passed into a proverb. These visual and auditory impressions are only the way in for what may or may not be stored up as knowledge, but if you make abstracts of what you read and take notes of what you hear you call into operation a further intellectual process, the motor side of the sensori-motor mechanism of the brain, whereby you are compelled to think for yourselves, a procedure which is somewhat neglected in these days when everything is made easy and prepared for you by countless lectures, demonstrations, tutorial classes, and coaching of every kind. I think that this opsonic process if applied too freely to the mental pabulum is liable to debilitate the mental digestion which, like the physical, requires a stimulus and plenty of hard work to keep it in good order. As Gibbon puts it, "Every person has two educations, one which he receives from others, one, *more important*, which he gives himself." By all means make use of the help which is provided but do not consider it a substitute for the work you should do for yourselves. The best way of acquiring medical knowledge is to study a case in the wards, so that by daily observation you become familiar with the aspect of the patient; to note carefully for yourselves the various physical signs and symptoms which may be present, how they change from day to day and affect the prognosis, and above all not to neglect the opportunity, when occasion offers, of observing in the post-mortem room the pathological changes to which the disease has given rise. Do not be content with merely taking notes in the wards but make a copy of them in your own clinical notebooks, reading up at the same time an account of the disease in some medical text-book. Then add as a supplement to your notes a brief summary of the points in which the case you have been watching differs from a so-called "typical" case. You will thus have a clear mental picture or object lesson of the

disease which you should have no difficulty in recalling in the future.

[Sir John Broadbent proceeded to define the various spheres of activity presented by modern medicine, and after forecasting the limitations of the physician's functions which will follow upon the spread of sanitation and the consequent diminution of infective diseases he proceeded:] Sir Almroth Wright will tell us that all that will be left for the physician of the future will be the functions of an opsonist and immunisator. Now I am not so pessimistic, or should I say "opsonistic," as that. I believe that the day will come when Sir Almroth Wright will evolve an anti-rheumatic vaccine which will rob the heart specialist of his livelihood. There will still, however, be left to the physician a host of other maladies which I need not enumerate, and I defy Sir Almroth Wright to discover a vaccine for what I consider one of the most serious disorders of the present day—neurasthenia, or nervous breakdown as I would prefer to call it. By this I do not mean the born-tired feeling of the unemployable or the *blasé* invertebrate condition of the born-rich without occupation, but the loss of nerve control and of mental energy which comes to the neurotic when the nervous system is strained to breaking point, and the hapless sufferer drifts like a ship without a helmsman, storm-tossed on the sea of his emotions. In such case he will look to the physician to assume command and pilot him back to safety. A sympathetic understanding of the symptoms, firmness combined with patience and great tact, will be necessary if the physician is to acquire the confidence of the patient which is essential for the successful conduct of the case. We are, naturally, apt to pay more attention to what we consider "interesting" cases from our point of view, but we must remember that to the patient his own ailment, however trivial we may consider it, is all important. If we bear in mind Bacon's advice[1] on the choice of a physician and regulate our conduct accordingly we shall not, I think, go far wrong. "Physicians are, some of them, so pleasing and conformable to the humour of the patient as they press not the true cure of the disease; and some others are so regular in proceeding according to art for the disease as they respect not sufficiently the condition of the patient. Take one of a middle temper; or if it may not be found in one man, combine two of either sort; and forget not to call as well as the best acquainted with your body, the best reputed of his faculty."

Unfortunately, the tendency of a large section of the British public at the present time is to take no physician at all, but to take some of the secret so-called remedies for every ill that are advertised in such a barefaced manner in the daily press. It is calculated that over two and a half million pounds were spent on this kind of trash during the past year. I think if the medical profession would set to work and see that some legislation is adopted to check the indiscriminate sale of these articles, they would do more good than constantly crying out about hospital abuse by patients who can afford to pay. Personally I have seen very few who could be suspected of coming to my out-patient department under false pretences, and we are at St. Mary's Hospital safeguarded against such abuse by the services of an inquiry officer who investigates the financial position of any doubtful case and refers the patient to a special committee which rejects him if he can afford to pay a doctor. This precaution should be adopted by all hospitals, and I think it would be an excellent thing if there were some coördination of hospitals with neighbouring provident dispensaries, so that cases unsuitable for treatment at the former could be referred to the latter.

[The speaker proceeded to consider certain points in out-patient work which are eminently unsatisfactory from the point of view both of the physician and of the patient. The first of these was the treatment of consumptive patients. He pointed out the frequent inability of such patients to carry out the dietetic and hygienic advice given them in the hospital out-patient department, and described the limited nature of their dwellings and surroundings. He then continued:] You may ask, Why not send these patients to sanatoriums since it is generally recognised that sanatorium treatment offers the best prospects for the arrest and cure of the disease? In the first place many of these cases are too advanced for admission to sanatoriums, as the working man does not usually seek advice till the disease is so advanced that he is too ill to follow his employment; secondly, the sanatorium accommodation for the poor is so inadequate that even if we get an early case the patient may have to wait some four to six months before he can be admitted, by which time the disease will probably be too advanced to allow of his admission. Practically the free sanatorium accommodation for working men in London consists of 100 beds at Northwood, to which admission can only be obtained through the Mount Vernon Hospital, and 100 beds at Frimley Sanatorium, which is attached to the Brompton Hospital for Consumption. There are a certain number of sanatoriums to which patients are admitted for a comparatively small payment, such as the Kelling Sanatorium at Holt (37 beds), the Maltings Sanatorium at Nayland in Suffolk (32 beds), the National Sanatorium at Bournemouth (85 beds), and a few others. In this connexion I must not omit to mention the Sanatorium at Benenden in Kent of 68 beds, which is of especial interest in that it represents the first attempt in this country on the part of the working classes to provide a sanatorium which shall be self-supporting and maintained by their own efforts. This has been carried into effect by the various friendly societies and trade unions, such as the Post Office Union, Hearts of Oak, &c., which have agreed to subsidise beds for the benefit of their members. There are many institutions of this kind in Germany, and it has been found by the working class insurance societies in that country as a matter of experience that it is more economical from their point of view to maintain beds at sanatoriums for their members attacked by pulmonary tuberculosis, many of whom as a result of treatment at the sanatorium for a few months are able to return to work, than to have to dole out sick pay for indefinite periods with no prospect of recovery to their phthisical members. In this country the excellent results obtained at the Frimley Sanatorium by Dr. M. S. Paterson and Dr. A. C. Inman, the former a St. Mary's man, by the scientific methods they employ in utilising the opsonic index as a means of graduating the amount of work which can be safely undertaken by convalescent patients, have shown how the consumptive working man can be restored to a condition of health and bodily vigour such that he can again undertake the most arduous manual labour. It will, however, be many years before the supply of sanatoriums for the poor can possibly equal the demand. In the meantime it is desirable and essential for the proper control of the disease that there should be some coördinated medical and sanitary supervision not only of cases awaiting sanatorium treatment but also of the large number of cases considered too advanced for this. How, then, can this be effected? In Edinburgh, New York, Boston, and other cities in America it has been found that satisfactory and encouraging results in this direction have been attained by tuberculosis dispensaries or clearing houses for consumptives, and I believe that the establishment of a system of similar institutions throughout London working in coöperation with the general hospitals and existing charitable agencies would be the most effectual method of dealing with the tuberculosis question in the metropolis. As a commencement a scheme is now on foot to found an institution of this nature in the borough of Paddington, modelled on the Royal Victoria Dispensary for Tuberculosis which has been working successfully in Edinburgh for the last 21 years. The outlines of the scheme are as follows: That patients should attend regularly at the dispensary. That they should be visited at their homes and instructed as to the proper sanitary precautions to be observed, and that measures should be taken to see that these are effectively carried out. That the coöperation and aid of existing philanthropic agencies and private individuals should be sought to provide for prompt admission of suitable cases to sanatoriums when practicable, and failing this to arrange as far as possible for such patients to live an open-air life. Dr. J. H. Pratt of Baltimore, in an interesting paper read at the meeting of the British Medical Association this year at Sheffield, showed how the open-air treatment of consumption may be effectively carried out even in the homes of the poor, and how by judicious and inexpensive alterations to provide effective ventilation, or by the erection of a balcony or a roof shelter what appear to be utterly unsuitable dwellings can be successfully adapted. The medical supervision of cases discharged from sanatoriums would also form an important part of the work of the institution. It is hoped also that

[1] Essay on the Regimen of Health.

sufficient funds may be forthcoming to provide assistance for dependants while the breadwinner is undergoing treatment. The institution is not intended to interfere with the work of existing institutions or that of the medical practitioner, but rather to work in coöperation with them. No patient would be treated or allowed to attend the institution who could afford to pay a doctor, or who is attending a hospital, or who is or has been under the care of a medical practitioner without the written consent of the doctor whom he has consulted.

[Turning from this subject the speaker devoted much of the remainder of his address to the dental needs of the poor. After describing the magnitude of this evil and the urgency for a remedy from the point of view of the national health, he deprecated Mr. J. G. Turner's suggestion of the levy of a special dental rate and advocated that the dental departments of the general hospitals should undertake the filling of teeth and the supply of dentures, and that similar departments should be added to the provident dispensaries. The dental inspection and treatment of school-children and their instruction in the use of the tooth-brush were of the first importance. Sir John Broadbent then concluded with the following words:]

There is one other point I should like to touch upon. In the out-patient department we see many distressing cases in which the breadwinner, though seriously ill, is unwilling to give up his work and come into hospital for a time, though the rest and treatment there afforded might avert a fatal issue, as he says that this would mean starvation for his wife and family. To give one or two instances which have recently come under my notice. A hansom cab driver with serious heart disease (aortic incompetence with failing compensation) insisted on continuing to drive his cab in spite of warnings, to the great peril of its occupants as well as himself, as he was liable at any time to drop down dead. A stableman with advanced dropsy refused to come into hospital for treatment which would have afforded immediate relief. A window cleaner with an internal cancer persisted in following his occupation, though he was so weak he could hardly stand (a pleasant prospect, this, for the uninsured householder). These are instances out of many of the dilemma in which the really plucky working man is placed by illness, and I should like to see the hospital in touch with some charitable agency so that some provision could be arranged for the support of the wife and family while the breadwinner is temporarily incapacitated. I am sure there would be little difficulty in raising a special fund for the purpose and I think that some charitable agency, such as the Charity Organisation Society, would be only too glad to act as almoners to the fund. In these days when so much is done for the unemployed, for whom work and a comfortable berth at a farm colony are provided by public subscription, I think it is time that something should be done for the genuine working man who, by no fault of his own, is temporarily incapacitated by illness.

LONDON SCHOOL OF MEDICINE FOR WOMEN.

INTRODUCTORY ADDRESS BY H. SAINSBURY, M.D. LOND., F.R.C.P. LOND., SENIOR PHYSICIAN TO THE ROYAL FREE HOSPITAL.

Dr. Sainsbury took for his subject "Some Points of Importance in the Study and Pursuit of Medicine." After some opening remarks inculcating earnestness of study he warned his students against too early specialisation in either medicine or surgery, which great branches should be regarded as complementary and not antagonistic in their aims. He proceeded:—If I were asked to define medicine and surgery I should, whilst disclaiming any pretence at a sharp demarcation of sciences which touch and blend at so many points, describe medicine as applied physiology and surgery as applied anatomy. I mean by the latter expression living anatomy—i.e., the living, working organs and systems; but you will say this is physiology, and so it is, and thus at the very outset my attempt at separation breaks down. And yet I hold a very definite conception which I must try to convey; this living anatomy is structure on a *large* scale and function upon a correspondingly large scale, and in this grosser functioning, from the surgical standpoint, the topography of the organs and parts assumes a predominant importance, and hence the anatomy of death—i.e., the structural relationship of the parts at a standstill—is so essential a study. Give yourselves enthusiastically to this study, look intelligently at the facts of structure which you discover, and try in your mind's eye to bring them back to life and see them not in static but in dynamic equilibrium. Then consider why it is that you are prying into these intricacies of working and having found the answer, viz., in order that when the occasion comes you may safely enter this structural maze, interfering without deranging, or at least at a minimal cost of disturbance; having this answer in mind, look at your facts from the practical—i.e., applicable—side, always thinking how might this piece of knowledge be made use of. A fact with a reason behind it appeals to the mind and is the more easily remembered, whereas a bare fact, void of particular significance, is as difficult to impress as it is hard to retain. (I speak relatively, for the facility of the unaided memory is in the case of some people nothing short of marvellous.) Moreover, mere memory is the lowest form of mental process; the mind grows least upon its exercise; it is reasoning that we want, some attempt to put and meet the everlasting "why" of Socrates. Accordingly, make as large as you can your collection of reasonable facts.

Surgery, as applied living anatomy, will provide scope for the exercise of the highest powers of the mind in diagnosis, in forecast, and in treatment, and when you come to practise, certainly if the present phase of mind persist, you will find that it casts a wide net and secures a heavy draught. Is there anything which surgery, as above defined, does not cover? Sometimes I am tempted to doubt whether there is (I am talking, of course, of practice, there being no lack of medicine in the text-books), for the physician's remainder, after the surgical net has been cast and drawn, shows a remarkable paucity of fish and such as they are they run rather fine. And yet, and yet, medicine is a noble study and I would not change it if I had to begin all over again. Possibly, also, readjustments may in the future make their appearance sufficient to satisfy that modicum of the *auri sacra fames* of which the physician stands possessed, for as the obstetric physician has in self defence become the obstetric surgeon it is possible that the chest physician may come to think that chest surgery should be his also, and so forth. These are horrid suggestions and I apologise for making them, and in requital will offer this consolation that should such things come to pass we shall then all be specialists, each in his own department, practising both medicine and surgery; the reconcilement of the physician and surgeon will then be complete, the lamb and the lion united in one person will thenceforth lie down and uprise together. But whether we separate medicine and surgery or unite them in the person of one practitioner it matters not a whit—in the main they are quite distinct in their spheres of activity. The surgeon may claim more and more of the grosser structure and functioning of the body: he may say, "This organ is mine or at any rate I demand my share in it"; nay, he may claim even this cell cluster and this cell tract. Driven from pillar to post, always in retreat, the physician will make his final stand and say, "But the cell is mine, its powers, its potentialities are mine; away with knife and forceps, make room for my armamentarium." The chemist is telling us that the time-honoured theory of the elemental atom as an irreducible, unchangeable, material minimum no longer holds, that conceivably the atom may be raised or degraded up and down through the Mendeleef scale. Conceivably, perhaps, actually remotely possibly, even so will not the Daltonian atom as a material minimum still continue to play the chief part in the practical politics of chemical changes? I ask the question, having no authority to do more. In like manner though it were vain to forecast the future pronouncements of the physiologist in respect of the biological cell, yet may we not take it that in the practical politics of biology it stands now and will stand in the future for the irreducible structural unit? Here, then, we shall make our stand, intrenching ourselves behind its powers *in esse* or *in posse*. Good generalship, however, requires that there should be a hinterland of some sort at the back of even a last stand, and so, as the surgeons are an enterprising race, let me remind you, embryo physicians, that there are still the nucleus and the nucleolus upon which to fall back, good rallying points whence to hurl defiance at the pursuer before making good your retreat into the physico-chemical fastnesses of changing molecules and vanishing atoms and vanished fees; there you will be allowed to flounder in peace.

In all seriousness, however, let me now beg you to give your undivided attention to the cell in its manifold variations of form and power; here in this microcosm you shall find sufficient to engage and satisfy all your cravings for learning. Let me insist further that not only medicine but surgery also are both equally dependent upon the good pleasure of our structural unit, for what good purpose would it serve to bring the broken ends of the bone together if the osteoplastic cell failed to exert its powers? why tie, twist, or seal the artery with the cautery unless you can count upon the tissue cell to make good the ligation, torsion, or cauterisation? wherefore the delicate plastic operation except in reliance upon the plastic properties of the cell? It is manifest this corpusculum has an importance disproportionate to its size and the question how we may influence it becomes of great consequence. Look at it as there it trails a pseudopodium or brandishes a cilium or otherwise exhibits the fundamental property of contractility; or again there as it incorporates the simpler molecule and builds it up into some higher form of synthesis, or, reversing the process, breaks down the absorbed molecule into some simple grouping—in other words, as it builds up the internal secretion in the one case, prepares the excretory product in the other; again, see it as it busies itself storing potential energy in its substance with a view to its becoming dynamic at the right moment. Now all these activities depend upon processes which, being intracellular, intermolecular, are minute. How shall they be influenced, supposing them to fail in vigour or to become perverted?—by knife, or forceps, or other surgical engine? This is not conceivable; only by processes not less minute than their own, processes which can find room for their working within the body of the cell, only thus can they be reached. But these processes in request are none other than those we term physico-chemical and they are just such as the materia medica presents. The theory is unexceptionable. The medicamenta should be by nature eligible for the purpose indicated; but what says the ounce of practice which proverbially outweighs the ton of conjecture? For the answer I will refer you to the surgeon, ask him for his opinion as to the value of the mercurial, the iodide, the antiseptic. If he allow their value the whole case of the utilisability of the drug, its legitimate sphere of action, is established. Of course, such admission proves nothing as to the value of this or that particular drug, neither does it lend countenance to indiscriminate drugging, just as little as the wise operation justifies the injudicious one, in particular, or a meddlesome surgery, in general. [The lecturer illustrated this point by a eulogy of Lord Lister's employment of antiseptics.] You must next proceed to the medicamenta, and here you must be very searching in your investigation of what they claim to do and of the explanations which they proffer of their usefulness; do not, however, be too exacting in your demand for a reason; considering the complexity of the problem this were unreasonable, therefore unscientific. The only right course is upon sufficient evidence to act and *make trial*.

[Dr. Sainsbury proceeded to guard his remarks by a warning against the indiscriminate use of drugs and laid much of the blame for it upon the public love of "a prescription." He insisted that treatment by drugs should always be subordinate to treatment dietetic and hygienic and proceeded:—] And now I want to pass to another matter and must ask you to look at the cell unit as it may happen to be contracting or secreting or otherwise functioning. In the midst of this business suddenly by way of a nerve fibre comes a something and we note one of two things, either that the business of the cell goes on at an increased pace or that it begins to slacken, proceeding even to a complete standstill. What has taken place? Force of some kind must have been conveyed by the nerve fibre, for the momentum of the cell has been added to or taken from, but how exactly the exciting or inhibiting dose of energy has been brought to bear this is a more secret matter. Attractive as is this question I may not stay to inquire into it, for indeed it has been mentioned only for the purpose of insisting that after this very fashion works that obscure power which we call the mind. What the mechanism of conveyance and application may be, however concealed the route, the fact is unquestionable that the mind influences the body, now quickening, now depressing the vitality of the cell. By the mind we understand the intellectual faculties, but there is another side to the subjectivity of man—viz., the emotional or affective—and these influence even more powerfully cell activity. How? Here is a great mystery, but again the fact is certain—the psyche is a great moving element in what we are pleased to regard as the lower planes of life, the bodily workings. But does this bear upon the medical curriculum? It does indeed, nor must you ever lose sight of it. If the working of the cell is subject to the mental and emotional factor, then the psychology of man becomes a study of direct and supreme interest for you. Henceforth it becomes yours to enlist that psychology into the medical service of the body, yours to learn how that may be done. Now for one thing to touch another it must have affinity, must be in sympathy with it, and hence since the psychology of one man will be in closest relationship with the psychology of another, it follows that by psychic influences you will impress most readily the inner man. Do not, therefore, forget your own psyche, cultivate it, let it grow; expansion, by giving it a larger periphery, will cause it to present a larger surface for contact with other subjectivities and thus will enlarge the scope of your influence upon your fellows. Do not imagine that this is sentimentalism; sentiment it is, I admit, but whereas sentimentalism is a mere affectation, sentiment is a very real thing and you must not let it go, as much for your own sakes as also for the sake of those others whose minds and bodies you will be able to influence thereby. These things you may not be able to weigh, but believe me they have weight. The trouble, however, is that the practical business of life, in your case the medical curriculum for the next five years, is often so engrossing that it tends to monopolise the attention and to leave no room for studies and recreations which stand outside the line of its strong compelling current. What shall you do? You must fight against this compulsion, and thus—let us suppose that in your progress so far you have acquired an interest in poetry, in art, in music, to consider only the æsthetic side of the psyche—well, you must keep these interests alive. To do this you need not fear that time will be lacking; it will not be necessary to devote yourselves in excess to the culture of the æsthetic, a small attention will suffice; give that attention. [In illustration of this point the lecturer quoted Charles Darwin's lamentation over the atrophy of his æsthetic sense in the pursuit of science.]

The æsthetic aspect of man does not reveal to us the whole of his humanity; there is, besides, the ethical aspect and the religious aspect, both calling aloud for consideration by the physician, both standing for much more than the æsthetic in the standardisation of character; but though this is so I may only remind you that these aspects of humanity cover forces of immense potential which, for your own sakes as well as for the sake of others, you cannot afford to ignore; forces, moreover, which are subject to the great law of growth with use, of atrophy with disuse. Give this whole subject your very earnest consideration and endeavour by the development of your own psychic powers to the best of your ability to have as much as possible in common with your fellows; this will apply not merely to the five years' curriculum but to your work, the pursuit of medicine, throughout life.

MIDDLESEX HOSPITAL.

INTRODUCTORY ADDRESS BY A. M. KELLAS, PH.D., B.SC., LECTURER IN CHEMISTRY.

Dr. Kellas in his opening words welcomed Mr. Rudyard Kipling and the other guests of the school and also the new students, to whom he commended the motto "Labor Omnia Vincit." He proceeded to announce the title of his discourse as "A Glance at the Development of Medicine as a Science." He passed rapidly in review the salient events in the history of medicine in the early ages of the world and in classical times, dwelling especially on the doctrines of Hippocrates and Galen; he then spoke briefly of the Arabian physicians and pointed out the influence of Arabian upon European medicine in the Middle Ages, illustrating it by the work of Avicenna, Paracelsus, and others. He then passed on to Ambroise Paré and after describing William Harvey's discovery of the circulation of the blood he continued:

Contemporary with Harvey there flourished an iatrochemical school founded by a famous professor at Leyden called Sylvius (1614–1672) who attempted to form a system of medicine depending upon the current views in chemistry and the circulation of the blood. Fermentations took place in the body and might produce acids which caused fever and other diseases. The most distinguished disciple of Sylvius

was Willis of London, a famous anatomist. He extended the system. All bodies in nature were regarded by him as composed of three elements—spirit, sulphur, and salt—spirit being only found in quantity in animals. His application of chemistry to examination of secretions was important, especially in connexion with diabetes, but his main system soon became obsolete. The multiplicity of dogmatic schools started a reaction towards a study of disease without preconceived hypothesis, and the leader of this natural school, as one might term it, was the great Sydenham, who has been termed the English Hippocrates. The philosopher and physician Locke was a friend of his, and admirably sums up his good characteristics in the following letter. "You cannot imagine how far a little observation carefully made by a man not tied up in the four humours (Galen) or the salt, sulphur and mercury of Paracelsus, or the acid and alkali of Sylvius and Willis which has lately prevailed, will carry a man in the curing of diseases, though very stubborn and dangerous; and that with very little and common things and almost no medicine at all." Sydenham may be said to have inculcated the true scientific spirit, which was greatly required, for he seems to have maintained throughout his work an "open mind." He revived the ideas of Hippocrates regarding the *vis medicatrix naturæ*. The attitude of most of the dogmatists of that age might be said to be similar to that of the gentleman who, during an argument, was taunted with not being open to conviction. "Not open to conviction," said he with great indignation, "I am open to conviction, but—*show me the man who'll convince me!*" The following incident indicates the artificial condition of affairs in his time. Sir Robert Talbor, a noted empiric, on being admitted to a consultation with certain learned dogmatists, was asked by one of them (doubtless superciliously) "What is fever?" "Fever," replied Talbor, "is a disease which I cannot define but can cure, and which you cannot cure but can define." Talbor's cure for fevers contained cinchona bark which had been introduced not long before and was denounced by many at the time as a special invention of the powers of evil. This is merely another example of unscientific criticism, still common enough at the present day, and of the truth of the adage, "Die Menschen verhöhnen was sie nicht verstehen" (i.e., "Men despise what they don't understand"). In the eighteenth century although some good work was done the making of dogmatic systems went on. Hofmann and Stahl formed separate pneumatic or animistic systems. Cullen of Edinburgh developed a system based upon von Haller's doctrine of "irritability," and Brown introduced his "stimulus" theory known as the Brunonian system. As the result of investigation Brown concluded that some diseases required stimulating treatment and others depletion. But 97 per cent. required stimulating and therefore the treatment of most physicians from Hippocrates onwards must have been wrong, because bleeding and depletory treatment had been common, the idea being to remove morbid matter by elimination. Brown's theory caused great excitement at the time. In Scotland and Germany there were riots among the students which seems to indicate that the student of those days took his work seriously if not always scientifically. The checking of excessive bleeding has probably been of considerable importance. A large amount of work in connexion with the scientific foundations of medicine was carried out in the century. The premier position should, perhaps, be given to Boerhaave and his students. Boerhaave was professor of medicine at Leyden, and although in the hospital there only 12 beds were available for teaching, Leyden became the centre of medical influence in Europe. A student of his, von Haller, was a distinguished physiologist and anatomist. He proved experimentally that "irritability" was a property of muscular tissue, and "sensibility" a property of nerve cells, and thus undermined the animistic hypothesis. The two brothers William and John Hunter, the former of whom was on the staff of the Middlesex Hospital, had a great influence in stimulating research in anatomy and pathology. William Hunter has been described as the first great teacher of anatomy in England. Jenner, who introduced vaccination, a practice empirical at the time but now readily understood on the recent doctrine of immunity, was a pupil of John Hunter. Lady Mary Wortley Montagu had previously introduced inoculation (about 1720) which proved unsatisfactory.

The beginning of the nineteenth century produced a further crop of theories. One of the most extraordinary—the homœopathic—introduced by Hahnemann (1755–1843) survives to the present time. Hahnemann held, first, that as Hippocrates had expressed it, "*similia similibus curantur*"—i.e., like cures like—which meant that the cure for a disease is the drug which would produce symptoms similar to those of the disease in a healthy person; secondly, that diseases were spiritual dynamic derangements of the vital principle; and thirdly, that medicines became more powerful on dilution, and claimed that he had proved these principles to be true by numerous scientific experiments. He theoretically rejected the *vis medicatrix naturæ*, although his good results in many cases probably were due to the truth indicated by the term, seeing that he often used medicines in such dilution that it was almost impossible to detect by analysis that anything was present. He would take the ordinary tinctures, dilute to 1-50th, dilute again to 1-50th, and so on for 30 times. Important advances had by this time been effected in physical diagnosis. Piorry improved the percussion method for recognising diseases of the chest introduced by Auenbrugger of Vienna some time before, and Laennec (1781–1826) introduced the stethoscope. Laennec was a keen student of morbid anatomy in connexion with auscultation, so that his work as regards diseases of the chest is of fundamental importance.

In Britain by far the most important work in the first half of the century was carried out by Sir Charles Bell, surgeon to the Middlesex Hospital. Bell's work is generally regarded as the most brilliant since that of Harvey. He showed: 1. That in the main nerve trunks there are special sensory filaments which transmit impressions from the surface of the body to the brain, and special motor filaments which convey motor impressions from the brain or other nerve centres to the muscles. 2. Some nerves consist entirely of sensory filaments and are therefore sensory nerves, and others are composed of motor filaments and are therefore motor nerves, while a third variety contains both kinds of filaments—sensori-motor; in the nerves proceeding from the spinal cord, for example, the posterior are sensory, and the anterior are motor. 3. The brain and spinal cord may be divided into separate parts, each part having a separate function, either sensory or motor. Incidentally one might mention that Bell took a great deal of trouble in connexion with the formation of our medical school, his interest and generosity probably being only surpassed by that of Mr. Morris a few years ago, when the school was in danger of being completely engulfed and assimilated by the University of which it is proud to form an autonomous part. Bell's work has been followed up by Marshall Hall (1832), who has been called the discoverer of the "reflex nervous system," Abercrombie, Broca, who discovered the centre of speech (1861); Brown-Séquard, Bastian, Ferrier, Charcot, Romberg, Golgi, and others have worked out results of great importance in connexion with clinical diagnosis and surgery of the brain in disease, since successfully applied by Lister, Horsley, Macewen, and others. Much further important work was done in the first half of last century, associated with the names of Bright, Addison, and Stokes in England, Rokitansky in Austria, Schonle in Germany, and many others. In 1839 Schwann published his epoch-marking cell theory, in 1859 Darwin published his "Origin of Species," and in 1860 Lord Lister published his theory of asepsis, founded upon the brilliant work of Pasteur.

It is difficult to overestimate the incalculable benefits which the Listerian system has conferred upon humanity. Taking an approximate average for the more important hospitals in Germany and in this country prior to 1860 the mortality in operative surgical cases was 40 per cent.; it is now under 3 per cent., notwithstanding that operations which no surgeon would have dared to attempt before 1860 are now commonly performed. In connexion with the Listerian antiseptic treatment might be mentioned the introduction of zinc chloride as an antiseptic in certain cases by Campbell de Morgan of the Middlesex Hospital. This is of interest because recent experiments in connexion with the ionic treatment (to be mentioned presently) have shown that the zinc ion is the best coagulating agent known in medicine.

Unfortunately time does not permit of one's giving even a *résumé* of the advances made in connexion with the application of physics to medicine. The Roentgen rays, the high-

frequency current, and the Finsen light can merely be mentioned. Bacteriology and Protozoology must be passed over. One cannot refrain from mentioning a most successful piece of work carried out during this year by one of the staff of this hospital in connexion with cancer. He has discovered how to obviate the terrible effects caused by a blocking of the axillary lymph spaces and ducts by cancer growth in long-standing cases.

[The lecturer then said a few words regarding the development of preventive medicine, and concluded with some remarks upon recent applications of chemistry to medicine.]

A division of chemical medicine which has risen into prominence during the last ten years is the "ionic" system of treatment, which aims at introducing curative elements where required by means of passage of an electric current through the body. Many interesting cures have been effected, the current being even applied to the brain. Many patients treated with the current through the brain assert that it clears their ideas, and one lady felt so much better mentally that she insisted upon her husband taking the treatment in order to improve his faculties. The precedent seems dangerous. Work in connexion with the new "ionic" treatment is being carried out in the Cancer Research Laboratories and Electrical Department of this hospital.

And now, in order to show the nature of the work to be done in chemical physiology and chemical pathology, one might perhaps be excused for entering into a few technical details. The human body is made up of microscopic living structures called cells, which contain many different chemical substances—e.g., a drop of blood contains about 5,000,000 living cells floating in blood serum, and for simplicity we will confine ourselves to substances present in the blood. The chemical compounds present are generally extraordinarily complex, consisting chiefly of bodies called proteins. Some simple substances are also present, two of small complexity, being water and sodium chloride. Now, before we can understand the chemical changes taking place in the human body our knowledge of proteins must be greatly increased. The proteins must be split up and the percentages of the different decomposition products formed must be accurately estimated for each. The methods of building up the proteins artificially from these parts must then be worked out. Two of the most important substances present in blood are serum albumin and hæmoglobin. The probable chemical formulæ of these substances are $C_{450}H_{720}N_{116}S_6O_{140}$ and $C_{768}H_{1208}N_{198}O_{218}FeS_3$. The relative numbers of atoms present (1432, 2378, 3, and 2 respectively) give a vague idea of the relative complexities but not of the relative difficulties of investigation. The difficulties increase out of all proportion to relative numbers of atoms present. A few decomposition products of serum albumin and hæmoglobin are histidin ($C_6H_9N_3O_2$), leucin ($C_6H_{13}NO_2$), and tyrosine ($C_9H_{11}NO_3$). So far as yet investigated hæmoglobin probably contains 36 residues of leucin molecules, 12 residues from histidin molecules, along with residues from tyrosine, arginin, cystin, and many other components. The chemical constitutions of the decomposition products and also of synthetic substances formed from them must be completely worked out. The difficulties which must be surmounted are extraordinary.

This completes the brief and inadequate glance at the development of medicine as a science. It has been shown that chemical pathology and chemical physiology are advancing comparatively slowly, because of the great difficulties inherent in these subjects, and that this fact delays the development of medicine. It was stated in the introduction to this address that continuous work would be required to surmount the difficulties. One would venture to suggest that continuity of effort could readily be attained by the endowment of several professorships or lectureships in the subjects named. (I hasten to add that I am not remotely eligible for such appointments.) The cost would be moderate. If the salaries of lecturers were £500, rising to £800 per annum, £1000 per annum would cover the cost for each post endowed, and one cannot doubt that the effect upon the development of medicine would be far-reaching. Young medical men who were ready to undergo a thorough training in analytical chemistry, and prepared to make the subject their life's work, would alone be eligible. One might expect that a State which can afford £65,000,000 for army and navy and £6,000,000 for old age pensions would not hesitate to endow at the small cost mentioned professorships in medicine which would have world-wide influence of a beneficial nature. Unfortunately our statesmen are most parsimonious towards any learning except primary education. Professor Starling, in a recent oration at University College on the "Building of a University," sums up their position as follows: "The attitude of our Government to a University is that of a gentleman who is asked for a copper by a tramp on the high road. They do indeed throw us a trifling dole, but take care to couple with the gift the statement that we have no right whatever to the money." At present very little work of the nature indicated is being done in this country, there being only one professorship of chemical pathology here. A considerable quantity of work is carried out in Germany which is to the front in scientific matters. If the State will not move in such a matter we must await the generosity of individuals. In the sketch of medical development just given the work of members of the Middlesex Hospital staff has been repeatedly mentioned, and we wish to emphasise the fact that a hospital which has been connected with William Hunter, Sir Charles Bell, Campbell de Morgan, and other eminent medical men of the very first rank whom exigencies of time have prevented one from mentioning, such as Sir Erasmus Wilson, Sir Thomas Watson, Sir William Flower, and Sir J. Burdon Sanderson, has traditions of a very high order, which should incite both to study with a view to excel in the profession and a desire to promote the progress of medical science. That the hospital is to-day abreast of its highest traditions you must admit, when I mention that among honours held by its present staff are the following: Sir Richard Douglas Powell is President of the Royal College of Physicians of London, Mr. Henry Morris is President of the Royal College of Surgeons of England, and Dr. J. Kingston Fowler is Dean of the Faculty of Medicine of the University of London.

A CASE OF DIVISION OF THE AUDITORY NERVE FOR PAINFUL TINNITUS.

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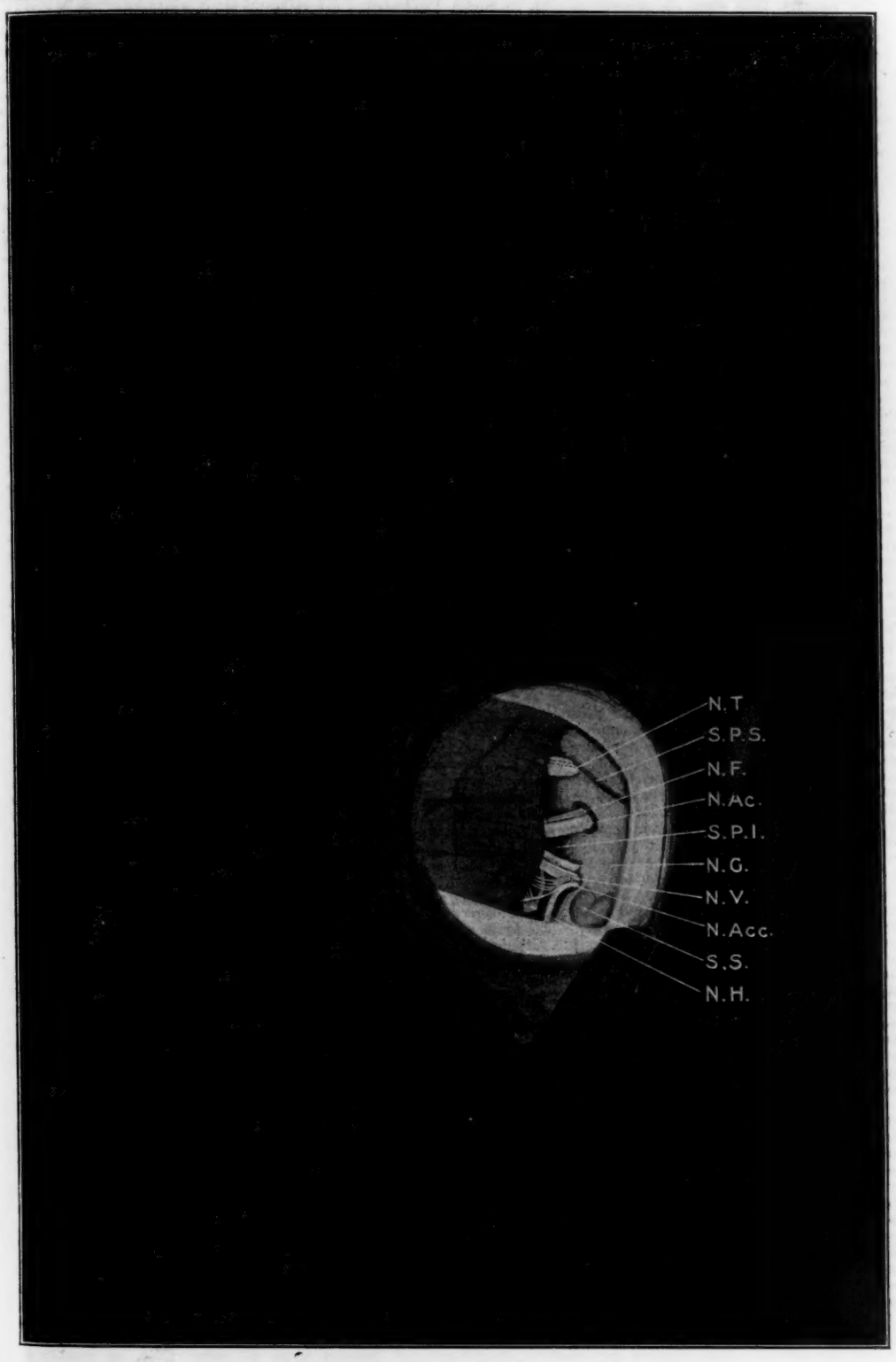
A WOMAN, aged 49 years, was sent to me by Mr. W. G. Sutcliffe of Margate on Nov. 14th, 1906. Her illness commenced suddenly in February, 1906, with buzzing tinnitus, vertigo, and nausea, and on several subsequent occasions a similar attack occurred. After a time the tinnitus became continuous and was more and more often accompanied by giddiness. No benefit was derived from medical treatment nor from staying at Margate and the Isle of Wight. In September, 1906, the character of the tinnitus suddenly changed from a buzzing to a most distressing steaming or whistling noise which, at its height, became actually painful; the patient's own expression was "the noise is the pain." When I saw her on Nov. 14th, 1906, about ten months after the commencement of the illness, she complained of intolerable tinnitus in the right ear, occasionally accompanied by giddiness and nausea. She was in great distress and feared that if no relief could be given she would go mad and kill herself. The right ear was almost totally deaf; the watch and the voice were not heard at all and the tuning fork was scarcely perceived. The tympanic membrane looked normal. There were no signs of a gross intracranial lesion; the disease was clearly labyrinthine. I suggested division of the auditory nerve but advised the

DESCRIPTION OF ILLUSTRATION ON PAGE 1071.

Figure illustrating the positions of the nerves exposed in the operation of division of the auditory nerve. (Reproduction of a photograph of a coloured drawing outlined at the time of operation.) The central portion of the operation area was brightly illuminated by an electric forehead lamp. The scalp and dural flaps are visible below this bright area and the cut edge of bone and scalp above. The cerebellum was displaced by dry sponge pressure. N.T., Nervus trigeminus (motor root on median aspect of sensory root, indicated by dotted lines). S.P.S., Sinus petrosus superior. N.F., Nervus facialis. N.Ac., Nervus acusticus. S.P.I., Sinus petrosus inferior. N.G., Nervus glossopharyngeus. N.V., Nervus vagus. N.Acc., Nervus accessorius. S.S., Sinus sigmoideus: entering posterior compartment of foramen jugulare. N.H., Nervus hypoglossus.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patient first to consult Dr. D. Ferrier. I did not see her again until January, 1908, when she came to me with Dr. Soden. In the interval she had been under Dr. Ferrier, Dr. Purves Stewart, Mr. Lake, Mr. Woods, and others. Many methods of treatment, including hypnotism and high-frequency currents, had been tried. In November, 1907, Mr. Lake removed the semicircular canals of the affected side; this operation almost completely relieved the patient from the vertigo but in no way affected the painful tinnitus. Facial palsy followed Mr. Lake's operation but from this there were signs of commencing recovery. The general condition was not good; the patient was feeble, fat, and flabby, and the pulse, for some reason or another, varied from 100 to 120. I renewed my original suggestion that the auditory nerve should be divided and this was now agreed to by Dr. Ferrier.

On Jan. 18th, 1908, bone was removed over the right cerebellar region, and nine days later the operation was completed. The dura was opened and the cerebellar hemisphere displaced backwards and inwards by marine sponge pressure. On removing the sponges the cerebellum remained in the retracted position, so that the fifth, seventh, eighth, ninth, tenth, eleventh, and twelfth nerves were exposed to view (see figure). The eighth nerve was depressed so as to enable me to see clearly the rounded cord of the facial nerve and to avoid injuring it when dividing the auditory nerve. Then the division of the auditory nerve was easily accomplished. I made no attempt to separate the nerve of Wrisberg from the auditory nerve; indeed, I did not see it, no doubt because it was concealed by the arachnoid sheath. There was slight hæmorrhage from the auditory artery. On recovery from the anæsthetic there was conjugate deviation of the eyes to the left, and the eyes could not be moved towards the right. In about 48 hours this movement was again possible, but was feeble and was attended by lateral nystagmus with wide excursions. Convalescence was very slow, the pulse remained at 100, or over, for some weeks, and there was a little difficulty in swallowing due to paresis of the right side of the palate and of the right side of the pharynx. There were occasional syncopal attacks and also paroxysmal feelings of impending suffocation by which she was sometimes awakened at night. There was absolute deafness of the right ear. The facial palsy was not increased by the operation. On March 13th there was still slight paresis affecting the right side of the palate and pharynx. Nystagmus was still present. The optic discs were normal and the pupils were equal. The respirations were 22 and feeble. The pulse was 100 and regular. The heart was normal. There was neither anæsthesia nor ataxia. The plantar reflexes were flexor. I saw the patient again on May 24th. The scalp flap was concave. *The painful tinnitus had ceased.* There was still some weakness on the right side of the face. The tongue deviated very slightly to the left when protruded. There was nystagmus when looking to the right but less than formerly, and only slight jerks on looking to the left. The palate, pharynx, and vocal cords moved normally and there was no longer any difficulty in breathing or in swallowing. The sense of taste was lost along the right side of the tongue. There was an area of deficient sensation (as tested with a camel's hair brush) of about the size of a split pea at the junction of the middle of the posterior border of the right external meatus with the concha. There was no affection of any other cranial nerve. The knee- and ankle-jerks were greater on the right than on the left side. The supinator jerks were equal. The pulse was 60. There were no indications of gross disease and no apparent reason why the patient should not get quite well.

Attempts to divide the auditory nerve have been previously made, but I am not aware that the operation I have just described was employed in any of them. It presented no difficulty; by the use of marine sponge pressure the nerves were clearly exposed and the view was not obscured by blood or cerebro-spinal fluid. I learnt this method from Dr. Ferrier, who employed it with great success in his experiments on the monkey's brain. I think it could often be used with great advantage in preference to the metal retractor when we have to displace the brain in order to divide a cranial nerve or remove a deeply seated tumour, such as one situated in the cerebello-pontine angle or one growing from the pituitary body.

The operation of division of the auditory nerve is a means of relieving a patient from distressing tinnitus and vertigo not amenable to other measures. Such patients are almost invariably deaf on the affected side so that no sacrifice is made by cutting off the labyrinth from its connexion with the brain. The operation being undertaken for disease of the labyrinth or its ganglia does not give rise to that group of symptoms which follows division of the auditory nerve or extirpation of the labyrinth in animals so well described by Bechterew and Risien Russell. Mr. Lake's skilful operation for removing the semicircular canals cannot be expected to relieve a painful tinnitus. Either the cochlear ganglion must be destroyed or the cochlear division of the auditory nerve divided.

Further successful cases would afford opportunities of correcting or confirming the views which have been expressed as to the course of the nerve fibres transmitting impulses of taste. Such opportunities would be of especial value since the sense of taste cannot be satisfactorily tested in the lower animals. At the operation several cranial nerves were so clearly exposed that I determined to recognise each one by stimulation. The fifth, seventh, ninth, tenth, eleventh, and twelfth nerves were stimulated both mechanically and electrically. The muscles of mastication, supplied by the motor division of the fifth; the muscles of the face, supplied by the seventh; the sterno-mastoid and trapezius, supplied by the eleventh; and the muscles of the tongue, supplied by the twelfth; all contracted. The glosso-pharyngeal and the vagus were stimulated but the results were not observed as the larynx, pharynx, and palate were not seen. No alteration in the pulse-rate or in the respiratory movements was detected. The nerve of Wrisberg was divided with the auditory in the case here related, and the sense of taste was lost on the corresponding side of the tongue, not only in the anterior two-thirds but also in the posterior third, which is usually considered to depend upon the glosso-pharyngeal for its connexion with the brain. Should it be found possible to divide the auditory nerve without injury to the nerve of Wrisberg we should expect the sense of taste to remain unaffected.

It is well known that when the chorda tympani, or the facial trunk above the point where the chorda tympani is given off is paralysed the sense of taste is lost on the anterior two-thirds of the tongue on the same side. In the complete mastoid operation the chorda tympani nerve can seldom escape injury and may be paralysed by disease before the operation. I have tested the sense of taste in a few patients after their recovery from the mastoid operation and found that it was lost on the anterior two-thirds of the tongue. Unfortunately the sense of taste was not tested in my case prior to division of the auditory nerve and the nerve of Wrisberg. It must have been already lost on the anterior two-thirds of the tongue owing to the facial palsy, but there is no reason to suggest that it was lost on the posterior third of the tongue.

The facial nerve and the nerve of Wrisberg together form a mixed nerve comparable to a spinal nerve; the motor impulses pass by way of the facial and the sensory by way of the nerve of Wrisberg. The fibres connected with the unipolar cells of the geniculate ganglion, both proximally and distally, convey impulses towards the brain; the ganglion itself being the so-called ganglion of origin or trophic centre of the sensory root of the seventh nerve, just as the ganglion on a spinal root is the trophic centre of the sensory portion of a spinal nerve. The sensory portion contains special sense fibres from the taste organs of the tongue and trophic and sensory fibres from the skin of the external meatus and concha, but the precise extent of the peripheral area from which it transmits impulses is not yet defined. The anatomical course of the sensory division of the facial nerve, between the periphery and the geniculate ganglion, has not yet been traced, but the taste fibres pass from the periphery to the geniculate ganglion through the chorda tympani and through the glosso-pharyngeal nerve. The taste fibres in the glosso-pharyngeal nerve pass, probably *viâ* Jacobson's nerve and the superficial petrosal nerves, to the geniculate ganglion.

The afferent fibres from the skin of the meatus and auricle on their way to the geniculate ganglion may travel by one or other of several routes: (1) through the auriculo-temporal branch of the fifth *viâ* the otic ganglion and the small superficial petrosal nerve; (2) through the auricular branch of the vagus to the trunk of the facial; or (3) *viâ* the auricular

branch of the vagus to the glosso-pharyngeal and thence *viâ* the nerve of Jacobson. Poirier describes the sensory nerve for the external auditory meatus (Arnold's nerve) with the branches of the facial, and points out that it presents considerable diversity in the arrangement of its connexions with other nerve trunks. Ordinarily it is connected with the vagus, but it is sometimes connected with the vagus and with the glosso-pharyngeal, and sometimes with the glosso-pharyngeal alone. Arnold's nerve is generally connected with the facial three or four millimetres above the stylo-mastoid foramen. Cunningham states that Arnold's nerve usually communicates with the facial nerve by a branch arising from the latter in the aqueduct of Fallopius. In rare instances Arnold's nerve is connected with the trunk of the glosso-pharyngeal below the ganglia. Cruveilhier, Richet, and Testut have seen a nerve pass directly from the base of the tongue and the soft palate to the facial at the stylo-mastoid foramen without joining the glosso-pharyngeal. This nerve may prove to be the nerve of taste from the posterior third of the tongue which ordinarily, but not always, is, for part of its course, included in the sheath of the glosso-pharyngeal.

The sensory division of the facial conveys, in addition to taste impulses, impulses of common sensation from the skin of the posterior half of the external auditory meatus and part of the concha. On division of the sensory trunk of the fifth nerve behind the Gasserian ganglion the sensation of the external auditory meatus and of part of the concha remains normal. Ramsay Hunt, in an interesting communication in the *Journal of Nervous and Mental Disease* last year, points out that inflammation of the geniculate ganglion causes herpes within the auricle and external auditory canal. Inflammation spreading from the geniculate ganglion along the sheath of the facial nerve explains why facial palsy and various auditory symptoms sometimes accompany herpes auricularis. The "zoster zone" of the geniculate ganglion lies between that of the Gasserian ganglion and that of the second and third cervical ganglia.

The operation described in this paper brings the distressing symptoms induced by certain forms of internal ear disease within the control of surgery, in that such symptoms may be cured by division of the auditory nerve just as epileptiform tic in the territory of the fifth nerve is cured by dividing the nerve or removing the Gasserian ganglion. Just as in division of the trunk of the fifth nerve we may hope some day to be able to spare the motor root, which is in no way concerned in the disease, so in division of the auditory nerve we may hope to be able to spare the nerve of Wrisberg which is in no way concerned with auditory symptoms. Labyrinthine symptoms have their origin in the cochlear ganglion or in the vestibular ganglion or in both ganglia, but we cannot yet think of a method for separating surgically the cochlear and vestibular divisions of the auditory nerve so as to be able to spare the one or the other as the symptoms may indicate.

Harley-street, W.

THE SERUM TREATMENT OF CEREBRO-SPINAL FEVER IN THE CITY OF GLASGOW FEVER HOSPITAL, BELVIDERE, BETWEEN MAY, 1906, AND MAY, 1908.

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AND
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INTRODUCTORY.

THE cases which form the material of this report came under notice during the recent prevalence of cerebro-spinal fever in Glasgow. They were admitted to the City of Glasgow Fever Hospital, Belvidere, during the two years May, 1906, to May, 1908. In May, 1906, the first admissions took place, and during the rest of that year cases continued to be admitted at the average rate of 7 per month. Early in 1907 the disease became epidemic, attaining its greatest prevalence in April when 42 cases entered Belvidere Hospital. Since that period there has been a gradual decline.

In the two years Belvidere Hospital received 330 cases of cerebro-spinal fever. Of these, 105 were treated with anti-meningococcic serum, while 225 cases were not so treated. In a few examples the specific organism was not recovered, though the symptoms were typical of the disease. With these exceptions, the 330 cases were bacteriologically verified.

The four sera employed were Professor Wassermann's, Professor Ruppel's, Professor Kolle's, and Messrs. Burroughs, Wellcome and Co.'s. Wassermann's serum was given to 20 patients with 13 deaths; Ruppel's to six patients with five deaths; Kolle's to 20 patients with 14 deaths; and Burroughs, Wellcome and Co.'s to 56 patients with 34 deaths. Three patients, with two deaths, had more than one kind of serum. It is not proposed to base any opinion of the relative merits of the sera on the above figures, and the various sera will not be further distinguished.

Injection was at times subcutaneous and at times into the spinal canal. Not more than 25 cubic centimetres were injected at one time into the spinal canal. The intravenous method was also employed. Few cases had one injection only. Several had more than 10. The largest number of injections in a single case was 21. The serum reactions which followed repeated injection are discussed by one of us (Currie, 1908) elsewhere; abnormal phenomena were induced but none were of a dangerous character. Of the 105 cases one half had more than 50 cubic centimetres in all. Several had more than 500 cubic centimetres in all. The largest total for a single patient was 725 cubic centimetres.

Serum was in use continuously throughout the whole two years, but at no stage did all persons admitted undergo serum treatment. The type and severity of cases varied as the outbreak progressed, and the employment of serum for all cases entering hospital during any particular period would have left no cases of a like order to act as controls. The results of administration were thus checked throughout by control cases of a similar type and the fallacy was avoided of comparing the treated cases of one stage of the epidemic with the untreated cases of another.

In placing a value on antimeningococcic serum as used by us it has seemed fitting to approach the matter from two separate points of view. If the good results of serum administration be immediate and obvious it is plain that clinical observation of treated patients will afford evidence of the benefit received. We shall therefore consider in the first place the clinical aspect of the question. If, on the other hand, administration of serum be followed by no clinical signs of improvement, it may nevertheless be revealed by statistical inquiry into case mortality and the like that serum-treated cases profited in the end. We therefore propose in the second place to deal with the subject from the statistical side.

CLINICAL CONSIDERATIONS.

To convey a correct impression of the clinical appearances which followed our serum treatment it will be well first of all to indicate the forms in which the disease was manifest among our cases. This is desirable, not only on account of the rapid changes which may occur in the course of any single attack of cerebro-spinal fever but also because the general type of the disease may differ appreciably in different places and at different times. The case mortality, for example, is variously reported by observers; this will be referred to later. It will suffice in the meantime to note, from the clinical side, that Dunn (1908) in America had not seen or heard of a case of verified cerebro-spinal fever terminating by sudden crisis at an early stage, yet this form of recovery was familiar here.

The symptoms of the Belvidere patients have already been detailed by Dow (1908). For the purposes of this report the 330 cases under notice are classified in two groups: first, the group of acute cases; and, second, the chronic group.

Acute cases.—In the acute cases the symptoms were those of intense general infection. The onset, with severe headache and vomiting, was abrupt and often notably sudden. In a short time the patients became unconscious. Some remained deeply comatose; others had periods of extreme restlessness alternating with periods of coma. The faces of these patients were pale or cyanotic. Their eyes were bloodshot and often dotted with hæmorrhages. The symptoms of local infection in certain examples were limited to some nuchal stiffness with Kernig's sign, often not very definite,

or even absent on occasion. The temperature was no criterion of severity; as a rule it remained moderately elevated, between 100° and 101° F.; sometimes it was scarcely higher than normal. Most of these cases had no abatement in their condition; they died during the period of acute infection, usually within the first week of illness.

Others, however, whose symptoms of acute invasion were scarcely less grave terminated abruptly in recovery. The ominous signs passed off; the temperature rapidly fell and remained permanently normal; Kernig's sign and some nuchal rigidity persisted for a few days longer. This favourable crisis occurred on any day up to the tenth of illness, but the most usual days were the seventh and eighth. By the severity of their symptoms, their recovery by crisis, and their convalescence with normal temperature these cases recalled the course of acute pneumonia.

Chronic cases.—Other cases were more prolonged. Some at the outset showed an acute phase resembling that described above; others began without acute symptoms but with evidence of local infection; others, again, had a transient acute invasion. Surviving the early days of their illness and entering a chronic phase, they tended to end by a lysis with considerable morning remissions. The duration of these cases varied within wide limits. Frequently, however, the temperature became normal within four weeks or thereby from the onset, so that recovery by lysis in four weeks' time came to be regarded by us as a common favourable termination for cases that survived the acute period. We ascertained by examination of the lumbar fluid that resolution was proceeding side by side with the decline in temperature.

During the continuance of the disease in its chronic form the condition of patients fluctuated in an uncertain manner from day to day. Sometimes they remained free from symptoms for a complete day or even for a few days, and thereupon entered on a period of headache, restlessness, irritability, and pyrexia. Sickness, too, was apt to recur from time to time between quiescent intervals. Such successive remissions and exacerbations were distinctive features of the chronic group.

From what has been said above it will be sufficiently apparent that spontaneous improvement in the condition of patients was liable to occur during the natural course of the disease as seen by us, alike in the acute group of cases with their critical recoveries, and in the chronic group with their oscillations between betterment and relapse. After serum treatment during the acute phase in certain of our examples the temperature suddenly fell and the symptoms passed, but this early favourable termination, as noted above, was by no means uncommon in our untreated patients. The clinical appearances after serum treatment in the chronic phase were not less equivocal. In some cases decrease of restlessness, headache, and general irritability occurred on the day following administration; in other cases two days later. In some cases the improvement was lasting; in others the symptoms recurred. Some cases again which had several injections of serum reacted differently with the different injections; a particular dose might appear to produce a satisfactory abatement of symptoms and a second dose for recurrence seem quite inert. Relapses were not prevented by serum treatment either during the acute or chronic phases of illness. In their influence on the phenomena of the disease frequent injections and large injections did not differ from injections at longer intervals or in smaller quantity.

On these observations we base the view that the administration of serum to our cases was followed in individuals by no consistent modification of the natural course of the disease.

STATISTICAL CONSIDERATIONS.

In the absence of clinical indications that benefit was derived from the serum we turn to the statistical side of the question. We compare treated and untreated cases in respect of case mortality, duration of fatal illnesses, duration of illnesses ending in recovery, and survival beyond the first ten days of illness. With reference to the course of the disease we have recognised two periods of time; one is the first ten days—days 0 to 9 of the tables; the other begins at the close of day 9. During the first ten days our cases, almost without exception, concluded the acute phase of their illness either by death, recovery, or passage to the chronic phase. Those which ended by death or recovery form the acute group of the clinical section. During the second period our cases were in the chronic phase; these are the chronic group of the clinical section. We have recognised the same two periods in considering the date on which serum treatment was begun with the view of noting the effect of early administration.

Case Mortality.

Total.—Of the 330 cases 83 recovered, while 247 died, a mortality of 74·8 per cent. for the total cases apart from the question of treatment. This figure is nearly approached by a mortality of 74·7 per cent. among 83 cases at Leith reported by Robertson (1907). Billings (1906) records 2755 cases in Greater New York, of whom 73·5 per cent. died; and Ames (1908) speaks of 166 cases in Boston City Hospital which had a mortality of 72 per cent. At Königshütte, according to Curtius (1905), among 200 cases 70 per cent. lost their lives; and 230 cases at Belfast, as noted by Robb (1907), had 70·43 per cent. of deaths. Other recent statements are appreciably lower. In the administrative district of Oppeln, as detailed by Kirchner (1905), over the period 1895–97, of 297 cases 41·4 per cent. proved fatal, while in the same area in 1905 during the Silesian epidemic the case mortality of 1955 sick persons was 51·2 per cent. 45 cases at Milan in the spring of 1907, as indicated by Bordoni-Uffreduzzi (1907), lost about 27 per cent. of their number; and in a military report published at Berlin (Genickstarre Epidemie, 1905) there is an account of an outbreak which attacked 26 men in a battalion, with a case mortality of only 3·8 per cent. Our cases had thus a higher total mortality than any of the records cited.

Serum treatment without reference to period of administration (Table I.).—Of the 330 cases 105 were serum-treated and 225 were not so treated. Among the 105 serum-treated cases, with 68 deaths, the case mortality was 64·8 per cent. Among the 225 untreated cases, with 179 deaths, the case mortality was 79·5 per cent. Considered with reference to the number of cases involved and also with reference to the fact that many cases admitted *in extremis* during the acute phase of the illness did not receive serum treatment, the difference between these percentages is barely significant. Our mortality of 64·8 per cent. for treated cases may be compared with other records. Robb (1907) with various sera treated 79 cases, of whom 74 per cent. died. Raczynski (1907), using Jochmann's serum, with nine cases had 66 per cent. of deaths. Krohne (1908) reports a fatality-rate of 47·6 per cent. among 135 patients, in the administrative district of Düsseldorf, who were treated with various sera, and Wassermann (1907), for 57 treated persons, states a case mortality of 47·3 per cent. Jochmann (1906) records 17 serum-treated cases with 29 per cent. of deaths at the time of his writing, and Flexner and Jobling (1908), among 47 cases which had their serum, report 27·6 per cent. mortality. Robb (1908), treating 30 patients with Flexner and Jobling's serum, had a mortality of 26·6 per cent. Dunn (1908), giving Flexner's serum to 15 cases, lost, or expected to lose, about 20 per cent. of their number. Lastly, Levy at Essen, with Kolle-Wassermann serum, had 11·76 per cent. of deaths among 40 sick. By these standards our treated cases had a somewhat high mortality.

Serum treatment with reference to period of administration (Table II.).—For the 105 serum-treated cases Table II. shows the day of illness on which serum treatment was begun. One case which proved fatal had serum on day 0—that is to say, within 24 hours of onset. Among 15 cases in which serum treatment began on day 1, with 13 deaths, the case mortality was 86·6 per cent. On day 2 the mortality was little less than on day 1, while from day 3 to day 7 inclusive the percentage of deaths was appreciably lower, varying from 30 to 66·6 per cent. After day 7 the number of cases on single days or groups of days was in general less than on the earlier days; but the eight cases opposite day 15, with three deaths, had a case mortality of 37·5 per cent.

It will thus be observed that the mortality was highest among the cases in which serum treatment was begun during the early days of illness. This disposition of case mortality is at variance with the results of serum treatment recorded by Wassermann (1907), who found that among 57 serum-treated cases regarding which information was obtained, the mortality rose from 21 per cent. for the first to second day of illness and 28 per cent. for the third, to 75 per cent. for the sixth day of illness and 80 per cent. for the fourteenth day. We do not ascribe this difference of case mortality to

our use of other sera besides that of Wassermann; rather we incline to the view that the acute phase of cerebro-spinal fever was specially virulent when the Glasgow epidemic was at its height and that for this reason many cases which came under treatment even in early days of their illness were already beyond the reach of remedies.

The treatment of 89 cases was begun during the first ten days of their illness—that is to say, between day 0 and day 9 inclusive; while the treatment of 16 was begun later than the first ten days of their illness—that is to say, on or after day 10. Among the 89 cases whose treatment was begun between day 0 and day 9, with 60 deaths, the case mortality was 67·4 per cent. Among the 16 cases in which treatment was begun on or after day 10, with eight deaths, the case mortality was 50 per cent. It emerges that the percentage of deaths among cases in which serum treatment was begun between day 0 and day 9 was higher than the percentage of deaths among cases in which treatment was begun on or after day 10. This result also differs considerably from the reports of others observers. Among Wassermann's 57 cases already referred to, 46 patients whose treatment was begun within the first 14 days—a period approximating to our 10-day period—had a mortality of 39·8 per cent.; while 11 patients whose treatment was begun outwith the first 14 days had a mortality of 81 per cent. Dunn (1908), as already noted, treated 15 cases with Flexner's serum. Of the 15 cases 12 patients at the time of his writing had recovered or were recovering, while three had died or ran the risk of dying. Of the 12 cured and hopeful cases all began serum during the first ten days of illness; of the three dead or doubtful cases all began serum treatment outwith the first ten days. The divergence of Wassermann's results from ours may again be explained as above by variation in the types of disease. The divergence of Dunn's results may be accounted for in a similar way. "It is possible," says this observer, "that my series included cases of an exceptional character." At least we think that the series in question included cases of a different order from many of ours.

Quantity of serum without reference to period of administration (*Table III.*).—With regard to the quantity of serum administered, the 105 serum-treated cases have been separated in Table III. into three divisions. Among 53 cases which had from 1 to 50 cubic centimetres of serum, with 37 deaths, the case mortality was 69·8 per cent.; among 18 cases which had from 51 to 100 cubic centimetres, with 12 deaths, the case mortality was 66·6 per cent.; and among 34 cases which had 101 cubic centimetres or more, with 19 deaths, the case mortality was 55·9 per cent. The percentages of the three divisions would thus appear to show a progressive diminution of the case mortality as the quantity of serum increases. Even if these differences were more significant than they happen to be it would be necessary to bear in mind that cases which received large totals of serum were cases which survived sufficiently long to be injected at repeated intervals and which had for this reason alone a certain prospect of recovery. Table III. does not make it plain that large doses of serum had a specially favourable influence.

Quantity of serum with reference to period of administration.—Table IV. shows details similar to those of Table III., considered with respect to cases whose treatment was begun within the first 10 days. The three divisions of Table IV. show a slightly higher case mortality than the three divisions of Table III., but preserve the same relation to one another. Table IV. affords no evidence that the administration of large quantities of serum, if begun between days 0 and 9, was of more value than the administration of similar quantities without reference to the period of beginning treatment.

Duration of Illnesses which ended in Death.

Average length of fatal illnesses without reference to period of administration of serum (*Table V.*).—Of serum-treated cases 68 proved fatal; the average duration of illness of the 68 cases was 26·44 days. Of untreated cases 179 proved fatal with an average duration of 19·75 days. The table as it stands suggests that in serum-treated cases which proved fatal death on an average occurred at a later period than in fatal untreated cases. It will, however, be necessary to analyse the group of fatal serum-treated cases with respect to the period at which administration of serum was begun before any conclusion can be drawn as to the relation between serum treatment and average duration of illness. This analysis is shown in Table VI.

Average length of fatal illnesses with reference to period of administration of serum (*Table VI.*).—Of 60 fatal cases in which serum treatment was begun in the first 10 days of illness the average duration of illness was 20·65 days. Of eight fatal cases in which serum treatment was begun after the completion of the first 10 days of illness the average duration of illness was 69·87 days. With reference to the latter class it is desirable to note that the eight cases which compose it must be looked on as in a sense selected cases, inasmuch as they had passed the acute phase of the disease during which in our experience the risk of speedy death was greatest. By detaching these eight cases from the total number of fatal serum-treated cases the result appears that the average length of illness of fatal cases whose treatment was begun in the period 0–9 was 20·65 days, a figure which differs by less than one day from the average duration of fatal untreated cases. The details of Table VI. therefore discount those of Table V. The evidence of the two tables together is insufficient to show that serum treatment had any definite influence in postponing the deaths of fatal cases.

Date of death without reference to the period of administration of serum (*Table VII.*).—The dates of death of cases are considered with reference to the two periods already defined, of which the first includes days 0 to 9 and covers the acute phase of the illness, while the second extends from day 10 onwards and covers the chronic phase. Among serum-treated patients the deaths were 68; of these, 35 took place in period 0–9, a percentage of 51·5; and 33 in period 10 upwards, a percentage of 48·5. Among untreated patients the number of deaths was 179, 92 in period 0–9, and 87 in period 10 upwards, percentages of 51·4 and 48·6 respectively. Alike for treated and untreated cases the percentage of deaths in both periods was close to 50. It does not therefore appear from Table VII. that the administration of serum affected the proportion of fatal cases in the two periods under notice.

Date of death with reference to period of administration of serum (*Table VIII.*).—In this table the fatal cases in which serum treatment began within the period 0–9 are detached from the total serum-treated cases of Table VII., and are compared in respect of the same considerations as before with the untreated cases. Of 60 fatal cases in which treatment began within the period 0–9, 35, or 58·3 per cent., of the patients died in period 0–9, and 25, or 41·7 per cent., in period 10 upwards. The difference between these percentages is in the sense that administration of serum within the period 0–9 was accompanied by a larger proportion of deaths within that period than occurred in untreated cases. It is, however, too slight to be significant and does not admit of any conclusion.

Duration of Illnesses which ended in Recovery.

Average duration of illness before permanent return of temperature to normal without reference to period of administration of serum (*Table IX.*).—Of serum-treated cases 37 of the patients recovered; the average duration of fever in the 37 cases before permanent return of temperature to normal, was 34·67 days. Of untreated cases there were 46 recoveries with an average duration of 30·23 days. The average duration of treated cases which recovered was greater by four days than the average duration of untreated cases which recovered. There is therefore no evidence from Table IX. that the administration of serum shortened the fever of cases which ended in recovery.

Average duration of illness before permanent return of temperature to normal with reference to period of administration of serum (*Table X.*).—Of 37 serum-treated patients who recovered 29 whose treatment was begun in the period 0–9 had illnesses with an average duration of 34·34 days. Eight patients whose treatment was begun in the period 10 upwards had on an average 35·87 days of fever. These data do not suggest that the administration of serum within the first 10 days of illness had any special value in shortening the course of the fever in cases which recovered.

Date of permanent return of temperature to normal without reference to period of administration of serum (*Table XI.*).—Among 37 serum-treated patients who recovered the fever lasted days 0–9 in four cases, or 10·8 per cent., and days 10 upwards in 33 cases, or 89·2 per cent. Among 46 untreated patients who recovered the fever lasted days 0–9 in

11 cases, or 23·9 per cent., and days 10 upwards in 35 cases, or 76·1 per cent. According to Table XI. the administration of serum did not appear to increase the number of recoveries during the acute phase of the illness.

Date of permanent return of temperature to normal with reference to period of administration of serum (*Table XII.*)—In this table the cases of patients whose treatment began during days 0–9 are compared with untreated cases. The conclusion is the same as in Table XI.

Survival of Days 0–9.

Number of cases surviving days 0–9 (*Table XIII.*).—It remains to ascertain whether it is possible that serum treatment within the first 10 days of illness—apart from the question of ultimate death or recovery—had been instrumental in inducing the survival of treated cases beyond the period in question. In Table XIII. the survivals of patients whose treatment began during days 0–9 are compared with those of untreated patients. Of 89 such serum-treated cases 54, or 60·7 per cent., survived the 0–9 period. Of 225 untreated cases 133, or 59·1 per cent., survived the 0–9 period. The percentages are all but identical, and no influence of serum treatment can be discerned.

Mortality of cases surviving days 0–9 (*Table XIV.*).—When, however, the mortality among serum-treated cases which survived days 0–9 is contrasted with that of untreated cases which survived the same period a difference is readily noted. Among 54 serum-treated cases which survived days 0–9, with 25 deaths, the mortality was 46·3 per cent.; while among 133 untreated cases which survived days 0–9, with 87 deaths, the mortality was 65·4 per cent. The proportion differs by almost 20 per cent. in favour of serum-treated cases. From this point of view, therefore, serum treatment within the first 10 days of illness seems to have had a limited good influence. Though serum-treated cases did not survive days 0–9 in greater number than untreated cases, yet serum-treated cases which did survive ultimately recovered in greater number than cases not treated with serum. The effect of serum would appear to have been to improve the prospect of recovery of cases which survived the first ten days of illness.

CONCLUSION.

An examination of our cases of cerebro-spinal fever during the period covered by this report, while leading in general to a negative conclusion, has nevertheless revealed one result in favour of serum treatment. It is true that on the clinical side we have not seen any obvious or constant train of events following the injection of serum; and on the statistical side we are unable to report that total case mortality was reduced, or fatal issues delayed, or favourable illnesses curtailed, or even that after administration of serum there was an increase in the number of patients who survived the first 10 days. But when, as in Table XIV., serum-treated survivors of the first 10 days are compared with untreated survivors in respect of case mortality, it is found that the treated cases recovered in greater number, and the difference between the respective percentages is sufficient to carry the implications that serum-treated cases which survived the first 10 days of illness had a better chance of life. This result, as we think, is significant; it suggests that the treatment in these cases, though failing to arrest the disease out of hand, was yet able to hamper its progress, aiding in this way the natural defences of the body and hindering in all likelihood the formation of exudates which would stand in the way of recovery.

We have already stated that the relatively high general fatality among our serum-treated cases and the absence of demonstrable benefit from early administration are to be ascribed, at least in some measure, to the severity of the acute phase during the time when the disease was most prevalent in Glasgow. But the part played by the site of injection and by the quality of the sera used may also be borne in mind.

As regards the site of injection our cases, with exceptions, had serum at least on one occasion into the spinal theca, after the withdrawal of cerebro-spinal fluid. Our frequently repeated injections, however, were subcutaneous for the most part, and our massive injections were necessarily so. Our results do not favour the combined method. More successful records have been obtained by others with exclusively thecal injections. On general grounds the thecal site seems better suited than the subcutaneous for the application of a bactericidal remedy to a local bacterial infection; and it is of interest to note in this connexion that McKenzie and Martin have shown that the cerebro-spinal fluid of cerebro-spinal fever cases did not contain substances which were bactericidal to the meningococcus *in vitro*, even when the blood serum of the same patients had markedly bactericidal properties.

As regards the quality of the sera used, it may be that the most recent sera have a higher specific value than those accessible to us during the period under notice. One of these recent sera, that of Flexner, is now in use here. The results of its administration are not embodied in this report. They will be recorded in due course.

We may conclude these remarks with a comment on early administration of serum as applied in acute and chronic cases respectively.

It is stated by authors that early administration is the essential condition of success in serum treatment, yet it is evident by Table II. that our earliest treated cases had the highest mortality. These acute cases, however, proving fatal shortly after admission and coming to section, were found to show general meningitis, hæmorrhagic patches, copious exudation, and the like. Their disease had run a rapid and virulent course. They were admitted, one within 24 hours, some within 48, and some within 72 hours from onset, but their chances of recovery, as the issue proved, were already compromised. With attacks which may be beyond control in a few hours from the first appearance of symptoms timely serum treatment is difficult to attain. These cases, though early within reach of treatment, were presumably not early enough.

Chronic cases, on the other hand, which survived the acute toxæmia became the subjects of profound pathological changes. Hydrocephalus, for example, led to death in our experience long after the stage of acute infection and after a study of the cerebro-spinal fluid had shown that the greater part of the exudate had disappeared. Post-mortem examination disclosed either complete resolution of exudate or organised exudate at the base of the brain. In such cases

TABLE I.—*Case Mortality. Serum Treatment without Reference to Period of Administration of Serum.*

—	Figures.			Percentages.		
	Died.	Recovered.	Total.	Died.	Recovered.	Total.
Serum-treated cases	68	37	105	64·8	35·2	100
Untreated cases	179	46	225	79·5	20·5	100
Total cases	247	83	330	74·8	25·2	100

TABLE II.—*Case Mortality. Serum Treatment with Reference to Period of Administration of Serum.*

Day of illness on which serum treatment was begun.	Number of cases.			Case mortality per cent.	Day of illness on which serum treatment was begun.	Number of cases.			Case mortality per cent.
	Died.	Recovered.	Total.			Died.	Recovered.	Total.	
0	1	—	1	100·0	10	—	1	1	0·0
1	13	2	15	86·6	15	3	5	8	37·5
2	14	3	17	82·3	20	1	1	2	50·0
3	10	8	18	55·6	25	1	1	2	50·0
4	8	4	12	66·6	30	1	—	1	100·0
5	3	7	10	30·0	35	1	—	1	100·0
6	1	1	2	50·0	40	—	—	—	—
7	5	3	8	62·5	45	—	—	—	—
8	1	—	1	100·0	50	—	—	—	—
9	4	1	5	80·0	75	1	—	1	100·0
Days 0–9	60	29	89	67·4	Day 10 upwards	8	8	16	50·0

death may be said to have been due to a complication rather than to the actual infective process. The issue and duration of the phase would appear to have been determined by the quality and site of the exudate, and by its fate—that is to say, by the question of its resolution or organisation.

Gross lesions such as these are a menace in themselves, apart from bacterial activity; and it is not to be expected that an anti-microbic serum can influence their course to a useful extent once they have become established. The remedy is prophylactic. Serum must be given sufficiently early to prevent their occurrence. This view is in agreement with our finding that serum-treated survivors of the first ten days of illness had a better prospect of recovery than untreated cases.

TABLE III.—*Case Mortality. Quantity of Serum without Reference to Period of Administration of Serum.*

Serum administered.	Figures.			Percentages.		
	Died.	Recovered.	Total.	Died.	Recovered.	Total.
1-50 cubic centimetres	37	16	53	69·8	30·2	100
51-100 ,, ,, ...	12	6	18	66·6	33·3	100
100 ,, ,, and upwards	19	15	34	55·9	44·1	100
Total serum-treated cases	68	37	105	64·8	35·2	100

TABLE IV.—*Case Mortality. Quantity of Serum with Reference to Period of Administration of Serum.*

Serum administered in cases, the treatment of which began during days 0-9.	Figures.			Percentages.		
	Died.	Recovered.	Total.	Died.	Recovered.	Total.
1-50 cubic centimetres	32	12	44	72·7	27·3	100
51-100 ,, ,, ...	10	4	14	71·4	28·6	100
100 ,, ,, and upwards	18	13	31	58·1	41·9	100
Total cases, the treatment of which began during days 0-9...	60	29	89	67·4	32·6	100

TABLE V.—*Duration of Illnesses which Ended in Death. Average Duration of Illnesses without Reference to Period of Administration of Serum.*

Cases.	Number of cases.	Average duration of illness in days.
Serum-treated cases	68	26·44
Untreated cases	179	19·75

TABLE VI.—*Duration of Illnesses which Ended in Death. Average Duration of Illnesses with Reference to Period of Administration of Serum.*

Cases.	Number of cases.	Average duration of illness in days.
Treatment begun days 0-9	60	20·65
Treatment begun day 10 upwards ...	8	69·87
Total serum-treated cases	68	26·44

TABLE VII.—*Duration of Illnesses which Ended in Death. Date of Death without Reference to Period of Administration of Serum.*

Fatal cases.	Number of deaths			Percentages.		
	During days 0-9.	During day 10 upwards.	Total.	During days 0-9.	During day 10 upwards.	Total.
Serum-treated cases	35	33	68	51·5	48·5	100
Untreated cases	92	87	179	51·4	48·6	100
Total fatal cases	127	120	247	51·4	48·6	100

TABLE VIII.—*Duration of Illnesses which Ended in Death. Date of Death with Reference to Period of Administration of Serum.*

Fatal cases.	Number of deaths.			Percentages.		
	During days 0-9.	During day 10 upwards.	Total.	During days 0-9.	During day 10 upwards.	Total.
Cases in which treatment began during days 0-9 ...	35	25	60	58·3	41·7	100
Untreated cases	92	87	179	51·4	48·6	100

TABLE IX.—*Duration of Illnesses which ended in Recovery. Average Duration of Illnesses before Permanent Return of Temperature to Normal, without Reference to Period of Administration of Serum.*

Cases.	Number of cases.	Average duration of illness in days.
Serum-treated cases	37	34·67
Untreated cases	46	30·23

TABLE X.—*Duration of Illnesses which Ended in Recovery Average Duration of Illnesses before Permanent Return of Temperature to Normal, with Reference to Period of Administration of Serum.*

Cases.	Number of cases.	Average duration of illness in days.
Treatment begun days 0-9	29	34·34
Treatment begun day 10 upwards ...	8	35·87
Total serum-treated cases	37	34·67

TABLE XI.—*Duration of Illnesses which Ended in Recovery. Date of Permanent Return of Temperature to Normal without Reference to Period of Administration of Serum.*

Cases which ended in recovery.	Number of cases reaching permanent normal temperature.			Percentages.		
	During days 0-9.	During day 10 upwards.	Total.	During days 0-9.	During day 10 upwards.	Total.
Serum-treated cases	4	33	37	10·8	89·2	100
Untreated cases	11	35	46	23·9	76·1	100
Total cases which ended in recovery	15	68	83	18·1	81·9	100

TABLE XII.—*Duration of Illnesses which Ended in Recovery. Date of Permanent Return of Temperature to Normal with Reference to Period of Administration of Serum*

Cases which ended in recovery.	Number of cases reaching permanent normal temperature.			Percentages.		
	During days 0–9.	During day 10 upwards.	Total.	During days 0–9.	During day 10 upwards.	Total.
Cases ending in recovery whose treatment began during days 0–9	4	25	29	13·8	86·2	100
Untreated cases ending in recovery	11	35	46	23·9	76·1	100

TABLE XIII.—*Survival of Days 0–9. Number of Treated and Untreated Survivors.*

Cases.	Number of cases.			Percentages.		
	Dying days 0–9.	Surviving days 0–9.	Total.	Dying days 0–9.	Surviving days 0–9.	Total.
Cases whose treatment began days 0–9	35	54	89	39·3	60·7	100
Untreated cases	92	133	225	40·9	59·1	100

TABLE XIV.—*Survival of Days 0–9. Mortality among Treated and Untreated Survivors.*

Survivors of days 0–9.	Number of survivors.			Percentages.		
	Died.	Recovered.	Total.	Died.	Recovered.	Total.
Survivors whose treatment began days 0–9	25	29	54	46·3	53·7	100
Untreated survivors	87	46	133	65·4	34·6	100

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Glasgow.

AN ATTEMPT TO REHABILITATE THE PERMANGANATES.

BY E. C. BOUSFIELD, D.P.H. CANTAB. & LOND.,

DIRECTOR, CAMBERWELL RESEARCH LABORATORIES, AND BACTERIOLOGIST FOR THE METROPOLITAN BOROUGHS OF CAMBERWELL AND HACKNEY, ETC.

MORE than half a century has passed and a whole scientific world has been opened since the action of the permanganates as disinfectants was first brought to the notice of the medical profession. Indeed, this first of popular disinfectants was, in the time of its introduction to public notice, coeval with the first actual observation of a bacterium, that of anthrax, by Pollender in 1855. With the growth of bacteriological science and the recognition of one concrete agent of infection after another, numberless other claimants to destructive powers in connexion with them have been more or less successfully exploited, and except for popular use and upon vague and indefinite lines the permanganates as disinfectants have almost dropped out.

It is the purpose of this article to inquire how far this neglect is justified. The permanganates have many qualities which, given a reasonable disinfectant power, entitle them to consideration. Their very great power as generators of nascent oxygen, their non-poisonous character, their cheapness, and, lastly, their distinctive colour, are all features of value, whilst they alone possess the power of destroying the odour of putrescent matter and of thus affording, in the absence of odour, a very evident, if somewhat rough-and-ready, criterion of the amount of disinfection which has been effected. Finally, they have the advantage of leaving the substance to which they have been applied, whether solid or liquid, in a condition in which it is incapable of giving rise to disease either by the bacteria contained in it or by their products.

Having been consulted with reference to the choice of a disinfectant for a system of sewage disposal, which should be cheap, non-poisonous to both plants and animals as regards the subsequent disposal of the sewage, and yet should sterilise the sewage for the time being, the writer's choice was necessarily greatly narrowed down, and the only substances available appeared to be the cresol compounds and the permanganates. It was essential that the matter should be soluble, since a part of the system consisted in the addition to the sewage in its flow of a carefully and automatically measured amount of the substance chosen. The choice finally narrowed itself down to permanganate of potassium, izal, and Jeyes' fluid. The two latter had been more or less closely investigated, but it soon appeared that of the first named nothing exact was known at all. It was therefore necessary to institute a series of comparative experiments, keeping in mind the question of cost in large-scale working, and in the circumstances it was obvious that no method of testing, other than that carried out on the lines of actual working, could possibly give useful results.

The experiments were accordingly carried out as follows. Crude sewage actually flowing in the sewers of Camberwell was drawn up in a bucket, divided mechanically as completely as possible, and then placed in quantities of 10 cubic centimetres in a series of tubes. To each of these tubes except the first was then added 1 cubic centimetre of a disinfectant to be tested, the solutions being made 11 times as strong as the dilution to be tested, so that the latter might be present in the tube in the proper proportion. The first tube was at once diluted 100,000 times in a series of flasks of sterile tap water, and cultures were made to the number of three, each with 1 cubic centimetre of the dilution, in alkaline nutrient gelatin. These were incubated at room temperature, and furnished a standard of the number of bacteria present in the sewage. The disinfectants used were as follows:—

Permanganate of potash } Jeyes' fluid ... ... } 1-5000: 1-2500: 1-1000.
Izal ... ... }

These were allowed to act upon the sewage in the tubes,

after thorough mixing, for 12 hours. Dilutions were then made exactly as described for the original sewage, cultures made with 1 cubic centimetre, and incubated as before. The results are embodied in the following table :—

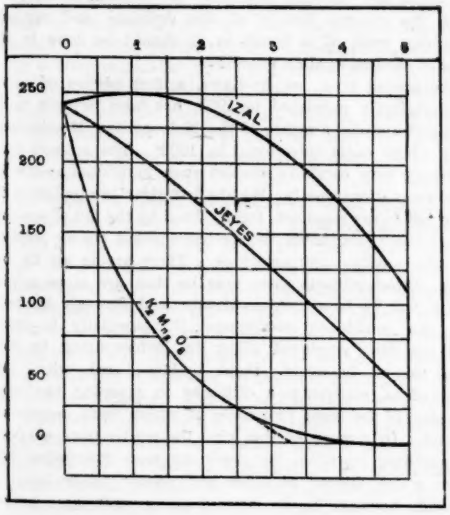
Colonies in 0·00001 Cubic Centimetre of Sewage after Treatment for 12 hours.

—	A	B	C	Average.	Corrected Average.	Conspicuous liquefiers.
Untreated sewage	185	250	279	239	239	9
$K_2Mn_2O_8$, 1-5000	83	94	98	91	99	1·3
,, 1-2500	20	28	16	21	23	0
,, 1-1000	1	0	2	1	1	0
Jeyes', 1-5000	193	185	198	192	209	10
,, 1-2500	156	106	142	134	147	7
,, 1-1000	36	25	30	30	33	2
Izal, 1-5000	252	237	224	237	261	11
,, 1-2500	209	200	226	212	233	8
,, 1-1000	101	110	92	101	111	8

The "corrected average" is made to allow for the amount of disinfectant added, which, of course, reduced the proportion of bacteria to the extent of 9 per cent.

Three strengths of disinfectant having in each case been taken it became possible to construct a curve from which the effect of other strengths could be calculated, and this is given below. It shows in the most interesting way that

Parts of Reagent per 5000 of Sewage.



whilst the disinfectant action of Jeyes' fluid was proportional to the strength of the dilution used in the case of izal the disinfectant action increased rapidly as the strength was increased, whilst with permanganate the effect ceased to increase as soon as a strength of 1 per 1000 was reached. It is, of course, to be noted in this connexion that whilst permanganate was used in the solid form, in the case of the other agents used the dilution was made from a solution, so that the results are to be interpreted accordingly. The experiments made thus pointing to permanganate as at once the strongest and cheapest agent of the three for the purpose in view, the next point was to test intermediate strengths of it, since the curve appeared to indicate that the maximum effect was reached while the dilution was weaker than 1 per 1000, as shown by the dotted line in the curve, and the time element was doubtful. The results were as follows :—

—	5 minutes	15 minutes	1 hour	2 hours	4 hours
Raw sewage	243	—	—	—	—
Permanganate 1-5000 ...	54	56	56	64	51
,, 1-4000 ...	2	1	2	1	2
,, 1-3000 ...	0	0	0	0	0
,, 1-2000 ...	0	0	0	0	0
,, 1-1000 ...	0	0	0	0	0

The fact that the results in this case were even more favourable than in the preceding series is probably attributable to the circumstance that the sewage consisted of a stool and urine, with a two-gallon flush, and not, as in the previous case, of natural sewage. The whole was intimately mixed, as before. Graduated quantities of a strong solution were also used instead of 1 cubic centimetre of a ten-times strength, so that the actual dilution was slightly stronger than before.

It was made abundantly clear that the time-element was of no importance whatever. It has been the fashion to say —upon what basis other than an *a priori* one it is difficult to imagine—that the presence of organic matter interferes with the disinfectant action of permanganates. If this be so, it appears to be a negligible factor, or, as seems more probable, the highly complex proteid of the bacteria succumbs more rapidly to the attack of the nascent oxygen of the permanganate than the less complex materials by which it is surrounded. It would seem clear also that since a solution of permanganate of a strength of 1-1000 is about the least that will completely deodorise such a mixture as that used in the experiments, we have at command a convenient rough-and-ready test of sterility. It seems safe to say that if such a mixture be deodorised completely it is also sterilised.

As regards the experiments as a whole, it may be said that for the purpose in view the Rideal-Walker method must have failed to be of service; and indeed, whilst the ideal mode of testing disinfectants has yet to be evolved, it would seem that the only safe method of procedure is to approximate the conditions of the test to those of actual practice. It is one thing to test disinfectant action on organisms suspended in sterile salt solution and another to take the organisms in their natural habitat and see what will kill them there. Moreover, the fact that the suspension of the organism containing the latter plus the disinfecting agent is transferred, without further dilution, to the culture medium and absorbed by its surface seems a distinct source of error. In the method detailed above it will be seen that the disinfectant was in each case diluted to 1–100000 of the strength at which it had been allowed to act for the purposes of the experiment, so that this cause of error was eliminated. The method is no doubt antiquated but it is not necessarily worthless for that reason, nor is every more modern one necessarily preferable. Moreover, the construction of graphic curves is, in the Rideal-Walker method, quite excluded.

Camberwell, S.E.

Reviews and Notices of Books.

Précis de Pathologie Interne. (*Précis of Internal Pathology.*) Par MM. BALTHAZARD, CESTAN, H. CLAUDE, MACAIGNE, NICOLAS, et VERGER, Professeurs agrégés des Facultés de Médecine. Paris: G. Steinheil. 1907. 4 vols.: vol. i., pp. 829; vol. ii., pp. 676; vol. iii., pp. 947; and vol. iv., pp. 868. Price complete 32 francs.

THE preface to this work, which is in effect an important text-book of medicine, is written by Professor C. Bouchard, who states that it is the product of six men who, having studied together and having similar ideals, have combined to produce a text-book which shall be at once scientific and practical.

The first volume is devoted to the infectious diseases, which are described by M. Nicolas of Lyons, and to the intoxications, the account of which is contributed by

M. Balthazard of Paris. The various bacterial infections are first described and the account of each is prefaced with a detailed description of the pathogenic organism, its growth, its method of action, and its effects in animals. The diseased conditions produced in man are carefully detailed, including the complications, the varieties, and the modes of infection. Diagnosis and treatment are then considered. The general arrangement is excellent and the accounts given of each disease are full and interesting; that devoted to enteric fever may be specially mentioned as constituting almost a monograph on the subject, since although no references are given the names of authorities are quoted for most of the statements made. Sections devoted to maladies produced by agents as yet undetermined, by fungi, by protozoa, and by large parasites follow. The description given of syphilis is also worthy of special notice. The account given of the treponema pallidum and its relation to the disease is most interesting, as might have been expected from M. Nicolas who has been active in establishing its importance in regard to the disease. In dealing with the intoxications, M. Balthazard discusses the rôle of the various forms of intoxication in pathology and then describes the mode of action of poisons and the defensive mechanisms of the body. The toxic effects of arsenic, phosphorus, mercury, and lead are considered in detail and the appropriate treatment is indicated. Certain organic poisons are next dealt with, including opium, alcohol, tobacco, and food intoxications. Among the auto-intoxications, myxœdema, exophthalmic goitre, tetany, sclerodermia, and acromegaly are included.

In the second volume M. Balthazard describes the diseases of nutrition and those of the blood and blood-forming organs. Among the diseases of nutrition, the account given of diabetes is worthy of special notice, that on gout being less exhaustive. In the section on diseases of the blood stress is laid upon the view that chlorosis is the result of a defect in the development of the cardio-vascular system and of the genital organs, as was originally maintained by Rokitansky and Virchow, a view which finds but few adherents in this country. A good account is given of the various forms of leucocytosis, both normal and pathological, and the forms of leukæmia are carefully described. Diseases of the heart and lungs are concisely but thoroughly described by M. Macaigne, the subject matter being well arranged. The forms of pulmonary tuberculosis are described at some length. The appropriate treatment of each condition is fully detailed.

The third volume contains articles on the diseases of the digestive tube, the peritoneum, and the pancreas, by M. Balthazard, and stress is laid on the importance of early diagnosis in cancer of the stomach and in conditions of perforation of the stomach and intestine. M. Claude contributes the section devoted to the liver, kidneys, and suprarenal capsules, and the subject matter is well up to date. The considerations of the methods of estimating the renal function and that of the subject of uræmia are both worthy of special commendation. The account of the various forms of cirrhosis of the liver is clear and interesting, as might be expected from the French school, to whom we are indebted for much information in regard to these conditions.

The fourth volume is devoted entirely to diseases of the nervous system and is written by M. Cestan of Toulouse and M. Verger of Bordeaux. The diseases are considered under various groupings and special attention is devoted to the symptoms in regard to locality and then each disease is separately considered. The various inflammatory affections of the nervous system also receive special attention and the concluding section is devoted to the neuroses. This volume constitutes an excellent manual of diseases of the nervous system and is well illustrated by figures and plates.

French text-books of medicine are usually well written and conveniently arranged. We can strongly recommend the present work as an admirable summary of the present knowledge in regard to medical diseases. Although references are not as a rule given the names of authorities are generally quoted, and the authors have not confined themselves to French workers but quote liberally from English and German writers. One of the most commendable features is the importance which is accorded to pathological considerations and their clinical applications.

Cast Iron House Drainage, with Especial Reference to the Drainage of Town Houses. By GERARD J. G. JENSEN, C.E. London: The Sanitary Publishing Company. 1908. Pp. 206. Price 4*s.* 6*d.* net. Also by the same author and another (name not given), *By-laws as to House Drainage and Sanitary Fittings made by the London County Council, with Annotations.* Second edition. Same Publishers. 1908. Pp. 147. Price 3*s.* 6*d.* net.

THE first of the above works is intended to emphasise the importance of using iron drains in town houses, especially when they are laid under a house. In these days of heavy motor traffic and of tube railways the necessity for their employment has been pretty generally recognised. Indeed, 20 or even 25 years ago iron drains found favour with the more advanced sanitarians. The book will be found a useful guide to that large class who intend to adopt the system but have not yet done so. It combines the advantages of a well-illustrated catalogue with valuable and independent criticism as to the desirability or otherwise of the various appliances shown; their purpose is fully explained together with the best methods of fixing, and a fund of useful information relating to weight of pipes, gradients, and capacity is given. Mr. Jensen, in fact, sets forth the general details of the drainage and sanitary plumbing work of a house as it should be done in the light of the best modern practice.

The second book, on By-Laws, a first edition of which was originally published in 1901, has been brought up to date and includes a notice of the Metropolitan Management Acts which came into force in 1903. The authors have evidently very carefully studied each individual by-law, as their annotations testify. We are first given the by-law in its bald, not to say repellent, form. Then by the aid of pen and pencil there are shown the probable reason for its creation and its possible interpretations. There are in all 23 by-laws. Other subjects there may be that are more exhilarating, but we have conscientiously read through the book and can confidently recommend it, especially to those who are daily employed either in endeavouring to conform to, or to avoid, these by-laws, and who, like many of us, experience a difficulty in grasping the inner meaning of the legal prolixities in which such documents abound. In a work of this kind the reader does not look for anything startling, but there are some interesting side lights which appear as notes and enable comparisons to be made between the by-laws of the several large towns, as Dublin, Liverpool, Birmingham, Manchester, and so on, and those of London. Some of these by-laws would seem to require speedy revision. For instance, under By-law 8 no privy may be constructed within 20 feet of a dwelling house, public building, or one used for manufacturing purposes. In Manchester, Birmingham, and Dublin the distance is 6 feet only, and in Belfast 4 feet. Also, whereas By-law 7 restricts the cubic capacity of such receptacle to 2 cubic feet, Birmingham permits a capacity of 40 cubic feet and only insists on its contents being removed at three months' intervals, while Dublin limits the time to a week and the capacity to 9 cubic feet. Under By-law 9 no privy may be constructed within 100 feet of any well, spring, or stream of water used, or likely to be used, by

man for drinking or domestic purposes. In Manchester it is the same, while in Birmingham the distance prescribed is 40 feet, in Dublin 10 feet, and in Belfast 5 feet. On the question of ash-bins there is again a great diversity in the regulations, as also in the case of certain objectionable fittings such as various forms of closets and traps.

The study of these by-laws has been of interest to us, for in the Report of THE LANCET Special Commission on the Relative Efficiency and Cost of Plumbers' Work, which was published on July 4th, 1896, there is scarcely a single thing now prohibited by these by-laws on the one hand, or made imperative to be performed on the other, that was not either condemned or recommended by the Commissioners of THE LANCET 12 years ago.

LIBRARY TABLE.

The Soul of Spain. By HAVELOCK ELLIS. London: Archibald Constable and Co. 1908. Pp. 419. Price 7*s.* 6*d.* net.—This is an interesting book and Mr. Havelock Ellis manages to justify his rather romantic title in an unmistakable way. He deals hardly at all with the political, industrial, or commercial aspect of a country which he obviously loves, and does not even allude to Spanish achievement in medicine, for these he considers to have a bearing only on the physical side of Spain; but devotes his time and highly trained powers of attention to the interpretation of certain aspects of the Spanish spirit, as manifested in literature, art, ethics, and behaviour. This spirit he finds characterised by "an attitude of heroic energy, of spiritual exaltation directed, not chiefly towards comfort or towards gain, but towards the more fundamental facts of human existence"—an estimate of Spanish efforts and ideals, which he certainly tells us much to justify, but which is distinctly opposed to the popular notion. The author has, however, journeyed up and down the country on several occasions and during a long extent of time, and throughout the whole period he has been meditating over and revising his impressions, so that with growing familiarity he might remove his prejudices. This is, of course, the best of all ways to get a clear view of essential facts, and the impression left upon the reader by this interesting work is that Mr. Ellis has spared no pains to make his diagnosis of the Spanish character a true one. Much of his thesis is certainly borne out by the literature and art of Spain, though the painters, dramatists, and novelists of other countries have usually introduced the Spaniard, especially the female Spaniard, into the story or on the canvas, merely in order to display the stereotyped qualities of the erotic, brilliant, and cruel. The chapter on the women of Spain is made particularly interesting by the anthropological insight displayed, and medical men on reading this section of the book will probably acquiesce in the author's psychology, though the result is to bring before them a very different person than that heroine of Merimée's novel whom Bizet has helped to immortalise. Of Velasquez and Cervantes Mr. Ellis has many things to say, of the sort that no one can contradict, and some things which have been said many times before, but he will be found here a clear and responsible guide to sound judgments. Whether his implicit belief in the essential nobility of the Spanish character rests upon a sound psychological basis or is the outcome of a fascination which he does not seek to disguise, we are not able to say. But we recommend the book to our readers, suggesting that a volume, when ably written and with honest conviction, often gains in interest by its ability to arouse a little opposition.

The Cathedrals of Norway, Sweden, and Denmark. By T. FRANCIS BUMPUS. London: T. Werner Laurie. 1908. Pp. 295. Price 16*s.* net.—Mr. Francis Bumpus has written four or five books already upon the cathedrals of different countries, several of which have been reviewed in our columns. He has hitherto treated districts that may be assumed to be familiar to all who have travelled—France, Germany, and Italy, for example—so that he was appealing to a large audience who had seen the things which he was describing; he had also another large audience who hoped to see those things soon, for there must be few among us in these days of rapid journeys who have not formed an intention of seeing the cathedrals, say, of Chartres, of Cologne, and of Florence before they die. Now, however, Mr. Bumpus takes us to lands quite familiar to many sportsmen but not much frequented by the artist or archæologist, so that his task of interesting the public is more difficult. The ecclesiology of Norway, Sweden, and Denmark has hitherto been but little regarded and the author has been unable to get the assistance of any published work dealing with it in a general manner. So that he is addressing readers who for the most part have not seen the cathedrals in question, who also have not seen pictures of them, and who, lastly, will find that the most salient characteristics of the buildings are not those which call for admiration at Rouen, say, or Siena. No Danish Romanesque church, for example, is at first sight beautiful; the cathedral at Trondhjem, a mixed Gothic and Renaissance structure, which, as Mr. Bumpus says, is the architectural pride of Norway, has been restored out of recognition, and its grand and lovely interior has to compensate for its external appearance; Upsala Cathedral, which appears to be the most important cathedral in Sweden, is a very unsatisfactory Gothic erection. It is quite certain that some such uncomplimentary reflections as the foregoing will be the first to rise to the lips of those who see the buildings. But Mr. Bumpus is a painstaking and enthusiastic *cicerone*. He shows us how to look at these rather novel structures and balances their internal beauty against their faults of exterior. He has also mapped out in his book a circular tour for travellers wherein the great cathedrals are but episodes. He points to the beauties of many less conspicuous churches and cathedrals and the result of reading his book should certainly be to make us want thoroughly to explore such buildings as the cathedrals at Roëskilde, Lund, and Strengvér. The long holiday is becoming more and more of a necessity to medical men, as the stress of modern life compels them to transact their business under ever-increasing pressure. There are many reasons why they should go to Scandinavia, and it appears from Mr. Bumpus's book that one of these, hitherto unsuspected, is the interesting nature of the church architecture.

Rational and Effective Treatment of Hip Disease. By P. BRUCE BENNIE, M.A., M.D., B.S. Melb., Honorary Medical Officer, Melbourne Hospital for Sick Children; President of the Melbourne Medical Association 1896; President of the Melbourne Pediatric Society 1907. Founded on experience of numerous cases in hospital practice during 28 years. Compiled by ALEXANDER B. BENNIE, M.A., M.B., B.S. Melb. London: Baillière, Tindall, and Cox. 1907. Pp. 108. Price 5*s.* net.—The object of this work is to bear witness to the value of the Thomas method of treatment of hip disease. The author holds that the Thomas splint is the only contrivance by which complete rest can be given to the joint and thus the disease can be arrested. He insists, however, that the splint as usually supplied by instrument makers is not that which was invented by Thomas. Full directions are given for measuring a patient for the splint and for making it. The fitting of a Thomas splint is nearly always left to the instrument maker and he employs a routine method. Dr. Bennie may be followed safely by those who wish to get the best results from splint treatment.

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Cast Iron House Drainage, with Especial Reference to the Drainage of Town Houses. By GERARD J. G. JENSEN, C.E. London: The Sanitary Publishing Company. 1908. Pp. 206. Price 4*s.* 6*d.* net. Also by the same author and another (name not given), *By-laws as to House Drainage and Sanitary Fittings made by the London County Council, with Annotations.* Second edition. Same Publishers. 1908. Pp. 147. Price 3*s.* 6*d.* net.

THE first of the above works is intended to emphasise the importance of using iron drains in town houses, especially when they are laid under a house. In these days of heavy motor traffic and of tube railways the necessity for their employment has been pretty generally recognised. Indeed, 20 or even 25 years ago iron drains found favour with the more advanced sanitarians. The book will be found a useful guide to that large class who intend to adopt the system but have not yet done so. It combines the advantages of a well-illustrated catalogue with valuable and independent criticism as to the desirability or otherwise of the various appliances shown; their purpose is fully explained together with the best methods of fixing, and a fund of useful information relating to weight of pipes, gradients, and capacity is given. Mr. Jensen, in fact, sets forth the general details of the drainage and sanitary plumbing work of a house as it should be done in the light of the best modern practice.

The second book, on By-Laws, a first edition of which was originally published in 1901, has been brought up to date and includes a notice of the Metropolitan Management Acts which came into force in 1903. The authors have evidently very carefully studied each individual by-law, as their annotations testify. We are first given the by-law in its bald, not to say repellent, form. Then by the aid of pen and pencil there are shown the probable reason for its creation and its possible interpretations. There are in all 23 by-laws. Other subjects there may be that are more exhilarating, but we have conscientiously read through the book and can confidently recommend it, especially to those who are daily employed either in endeavouring to conform to, or to avoid, these by-laws, and who, like many of us, experience a difficulty in grasping the inner meaning of the legal prolixities in which such documents abound. In a work of this kind the reader does not look for anything startling, but there are some interesting side lights which appear as notes and enable comparisons to be made between the by-laws of the several large towns, as Dublin, Liverpool, Birmingham, Manchester, and so on, and those of London. Some of these by-laws would seem to require speedy revision. For instance, under By-law 8 no privy may be constructed within 20 feet of a dwelling house, public building, or one used for manufacturing purposes. In Manchester, Birmingham, and Dublin the distance is 6 feet only, and in Belfast 4 feet. Also, whereas By-law 7 restricts the cubic capacity of such receptacle to 2 cubic feet, Birmingham permits a capacity of 40 cubic feet and only insists on its contents being removed at three months' intervals, while Dublin limits the time to a week and the capacity to 9 cubic feet. Under By-law 9 no privy may be constructed within 100 feet of any well, spring, or stream of water used, or likely to be used, by

man for drinking or domestic purposes. In Manchester it is the same, while in Birmingham the distance prescribed is 40 feet, in Dublin 10 feet, and in Belfast 5 feet. On the question of ash-bins there is again a great diversity in the regulations, as also in the case of certain objectionable fittings such as various forms of closets and traps.

The study of these by-laws has been of interest to us, for in the Report of THE LANCET Special Commission on the Relative Efficiency and Cost of Plumbers' Work, which was published on July 4th, 1896, there is scarcely a single thing now prohibited by these by-laws on the one hand, or made imperative to be performed on the other, that was not either condemned or recommended by the Commissioners of THE LANCET 12 years ago.

LIBRARY TABLE.

The Soul of Spain. By HAVELOCK ELLIS. London: Archibald Constable and Co. 1908. Pp. 419. Price 7*s.* 6*d.* net.—This is an interesting book and Mr. Havelock Ellis manages to justify his rather romantic title in an unmistakable way. He deals hardly at all with the political, industrial, or commercial aspect of a country which he obviously loves, and does not even allude to Spanish achievement in medicine, for these he considers to have a bearing only on the physical side of Spain; but devotes his time and highly trained powers of attention to the interpretation of certain aspects of the Spanish spirit, as manifested in literature, art, ethics, and behaviour. This spirit he finds characterised by "an attitude of heroic energy, of spiritual exaltation directed, not chiefly towards comfort or towards gain, but towards the more fundamental facts of human existence"—an estimate of Spanish efforts and ideals, which he certainly tells us much to justify, but which is distinctly opposed to the popular notion. The author has, however, journeyed up and down the country on several occasions and during a long extent of time, and throughout the whole period he has been meditating over and revising his impressions, so that with growing familiarity he might remove his prejudices. This is, of course, the best of all ways to get a clear view of essential facts, and the impression left upon the reader by this interesting work is that Mr. Ellis has spared no pains to make his diagnosis of the Spanish character a true one. Much of his thesis is certainly borne out by the literature and art of Spain, though the painters, dramatists, and novelists of other countries have usually introduced the Spaniard, especially the female Spaniard, into the story or on the canvas, merely in order to display the stereotyped qualities of the erotic, brilliant, and cruel. The chapter on the women of Spain is made particularly interesting by the anthropological insight displayed, and medical men on reading this section of the book will probably acquiesce in the author's psychology, though the result is to bring before them a very different person than that heroine of Merimée's novel whom Bizet has helped to immortalise. Of Velasquez and Cervantes Mr. Ellis has many things to say, of the sort that no one can contradict, and some things which have been said many times before, but he will be found here a clear and responsible guide to sound judgments. Whether his implicit belief in the essential nobility of the Spanish character rests upon a sound psychological basis or is the outcome of a fascination which he does not seek to disguise, we are not able to say. But we recommend the book to our readers, suggesting that a volume, when ably written and with honest conviction, often gains in interest by its ability to arouse a little opposition.

The Cathedrals of Norway, Sweden, and Denmark. By T. FRANCIS BUMPUS. London: T. Werner Laurie. 1908. Pp. 295. Price 16*s.* net.—Mr. Francis Bumpus has written four or five books already upon the cathedrals of different countries, several of which have been reviewed in our columns. He has hitherto treated districts that may be assumed to be familiar to all who have travelled—France, Germany, and Italy, for example—so that he was appealing to a large audience who had seen the things which he was describing; he had also another large audience who hoped to see those things soon, for there must be few among us in these days of rapid journeys who have not formed an intention of seeing the cathedrals, say, of Chartres, of Cologne, and of Florence before they die. Now, however, Mr. Bumpus takes us to lands quite familiar to many sportsmen but not much frequented by the artist or archæologist, so that his task of interesting the public is more difficult. The ecclesiology of Norway, Sweden, and Denmark has hitherto been but little regarded and the author has been unable to get the assistance of any published work dealing with it in a general manner. So that he is addressing readers who for the most part have not seen the cathedrals in question, who also have not seen pictures of them, and who, lastly, will find that the most salient characteristics of the buildings are not those which call for admiration at Rouen, say, or Siena. No Danish Romanesque church, for example, is at first sight beautiful; the cathedral at Trondhjem, a mixed Gothic and Renaissance structure, which, as Mr. Bumpus says, is the architectural pride of Norway, has been restored out of recognition, and its grand and lovely interior has to compensate for its external appearance; Upsala Cathedral, which appears to be the most important cathedral in Sweden, is a very unsatisfactory Gothic erection. It is quite certain that some such uncomplimentary reflections as the foregoing will be the first to rise to the lips of those who see the buildings. But Mr. Bumpus is a painstaking and enthusiastic *cicerone*. He shows us how to look at these rather novel structures and balances their internal beauty against their faults of exterior. He has also mapped out in his book a circular tour for travellers wherein the great cathedrals are but episodes. He points to the beauties of many less conspicuous churches and cathedrals and the result of reading his book should certainly be to make us want thoroughly to explore such buildings as the cathedrals at Roëskilde, Lund, and Strengver. The long holiday is becoming more and more of a necessity to medical men, as the stress of modern life compels them to transact their business under ever-increasing pressure. There are many reasons why they should go to Scandinavia, and it appears from Mr. Bumpus's book that one of these, hitherto unsuspected, is the interesting nature of the church architecture.

Rational and Effective Treatment of Hip Disease. By P. BRUCE BENNIE, M.A., M.D., B.S. Melb., Honorary Medical Officer, Melbourne Hospital for Sick Children; President of the Melbourne Medical Association 1896; President of the Melbourne Pediatric Society 1907. Founded on experience of numerous cases in hospital practice during 28 years. Compiled by ALEXANDER B. BENNIE, M.A., M.B., B.S. Melb. London: Baillière, Tindall, and Cox. 1907. Pp. 108. Price 5*s.* net.—The object of this work is to bear witness to the value of the Thomas method of treatment of hip disease. The author holds that the Thomas splint is the only contrivance by which complete rest can be given to the joint and thus the disease can be arrested. He insists, however, that the splint as usually supplied by instrument makers is not that which was invented by Thomas. Full directions are given for measuring a patient for the splint and for making it. The fitting of a Thomas splint is nearly always left to the instrument maker and he employs a routine method. Dr. Bennie may be followed safely by those who wish to get the best results from splint treatment.

We cannot agree with him that bony ankylosis never occurs in tuberculous disease in childhood; it is certainly rare but specimens of it exist in museums. The book is ably written and it should prove of interest to all who have to deal with tuberculous disease of the hip-joint.

A Text-Book of Minor Surgery. By EDWARD MILTON FOOTE, A.M., M.D., Instructor in Surgery, College of Physicians and Surgeons, Columbia University; Lecturer on Surgery, New York Polyclinic Medical School, &c. Illustrated by 407 engravings from original drawings and photographs. London: Sidney Appleton. 1908. Pp. 752. Price 21*s.* net.—Minor surgery includes nowadays many surgical procedures which at one time were looked upon as major operations, but the progress of surgery has made them of less severity and importance. The ordinary text-books often devote attention mainly to the more serious operations, yet the general practitioner has much more interest in the simpler common conditions with which he will have to deal. The book is lavishly illustrated; the illustrations are very good and in nearly all cases they show what they are intended to show. We can commend the work to the attention of junior practitioners who need some help in dealing with the ordinary surgical cases which come to them.

Climate, Considered especially in Relation to Man. By ROBERT DE COURCY WARD. With illustrations. London: John Murray. 1908. Pp. 372. Price 6*s.*—The most interesting chapter to medical readers, at all events, in this clearly written work is that entitled "The Hygiene of Zones" (Chapter VII.). In this chapter the author points out the complexity of the subject and explains the difficulties of establishing the exact relationship between climate and disease. Untrustworthy statistics are often at the root of this difficulty, while there are factors, such as sanitation, food, water, and so forth, which, of course, have an influence on the health of a community. The modern view, however, is that the cause of disease may no longer be traced directly to meteorological conditions but to the effects, more or less direct, of these conditions upon the micro-organisms which are the specific cause of the disease. As the author points out, atmospheric conditions may help or may retard the development of the micro-organisms and may strengthen or weaken the individual's power of resistance against the attacks of the germs. Further, Sir Patrick Manson has pointed out that in the case of malaria the mosquito is not only a vector but serves also as a medium in which the germ undergoes certain developmental changes necessary for its existence as a species, as well as for its successful introduction into a fresh human host. After this generalisation the author deals with various diseases and the kind of places in which and when they are prevalent. Further chapters deal with the changes of climate, the characteristics of the zones, and the classification of climates. He does not omit to mention the observations of the old Greek philosophers or to make reference to the attempted classification at relationships between climate and disease outlined by Hippocrates. The book furnishes a very interesting and readable contribution on the subject.

The Radio-active Substances: Their Properties and Behaviour. By WALTER MAKOWER. London: Kegan Paul, Trench, Trübner, and Co., Limited. 1908. Pp. 301. Price 5*s.*—At this stage in the history of radio-activity the want is felt of a text-book giving a clear and straightforward account of the phenomena and theories concerned so far as recent developments have gone. The discovery of radio-activity has, in fact, opened up a new branch of science which it cannot be doubted is going to be of some importance to medicine. We are satisfied that the book before us supplies a need and the author happily does not fail to realise the difficulties which face the student who for the first time approaches the subject. We need hardly point out that this student must often be the medical man in active practice who therefore has no time to go into undue detail and who, in fact, requires a clear, concise, and practical account of the position reached by recent studies of the subject. This book serves as an admirable and intelligently written introduction to the study of radio-activity. The subject is beset with some difficulties in regard to making it clear, but the author knows quite well the points which need the careful treatment by which they are made intelligible. He has avoided so far as possible the use of mathematics, and in those cases where the application of mathematics cannot be ignored he has used homely illustrations to help the reader to a clear appreciation of the theories involved. We cordially commend the book to those who would keep pace with the developments of this most interesting branch of scientific study.

The National Physique. By A. STAYT DUTTON, L.R.C.P Lond., M.R.C.S. Eng. London: Baillière, Tindall, and Cox. 1908. Pp. 188. Price 5*s.* net.—Mr. Dutton has been engaged in practice during 15 years in no less than 50 districts of England and Wales, including 12 in London, and has been so struck with the apparent prevalence in all of them of a common disease that he set himself to collect convincing evidence thereof and this book is the result of his inquiry. The disease in question is anæmia of the chlorotic type and his research has consisted in the estimation of the hæmoglobin in a large number of nominally healthy persons of various ages who were living their ordinary lives, his subjects being chosen at random chiefly amongst the working classes. In the first part of his book he records the results of these investigations which showed in almost every district that a considerable preponderance of people tested had a hæmoglobin percentage of between 10 and 20 below the normal, whilst many others had still poorer blood; the deficiency was more marked as a rule in boys than in men. On these premisses Mr. Dutton founds longer chapters which deal with the causes and prevention of physical deterioration, army recruiting, and prevalent diseases in connexion with the blood, from which it is clear that he subscribes whole-heartedly to the oldest of all physiological maxims, "The blood is the life." In the physical degeneration which he acknowledges to be a national danger he sees anæmia writ large, and though his book shows some signs of the special pleader we should not like to assert that he is altogether deceived. The connexion which he declares to exist between anæmia and imperfect physique would certainly have been more convincing had he given us some information concerning the weight and measurements of the people whose blood he examined, and until he has made some such systematic comparison he can be hardly said to have proved his case. The argument that because he finds anæmia very prevalent in a nation which is suffering from physical degeneration these two facts have a causal relationship might be appropriated by another who should desire to prove that any disorder of frequent occurrence, such as dental caries or dyspepsia, was responsible for deterioration in the national physique. Mr. Dutton has, however, written a suggestive little book and he is to be congratulated on having found time and inclination for a laborious piece of research in the exercise of an amazingly ubiquitous practice. It is not everyone who uses exceptional opportunities in so practical a manner.

The Solar System: A Study of Recent Observations. By CHARLES LANE POOR. With illustrations. London: John Murray. 1908. Pp. 310. Price 6*s.* net.—This book deals with an obviously wide subject but the author, while admitting that many interesting matters have had to be omitted, has succeeded, we think, in giving an impressive account of the results brought to light by modern methods

and modern observations in regard to our knowledge of the marvellous solar system. The book, of course, offers very little material which can usefully be discussed in a medical journal but it is needless to remark that the subject offers most interesting reading to the possessors of the scientific mind. The author has entered into a rather full discussion of recent writings concerning the existence of the canals in Mars. Certain highly imaginative and exceedingly popular ideas in regard to this planet have, he says, obtained such prominence and are supported with such a mass of apparently valid observations that they cannot be dismissed with a word. In 1877 the Italian observer, Schiaparelli, found on the continents of Mars a number of straight dark lines which he called *canali*. For many years the reality of this discovery was doubted but about ten years later the existence of some of these markings was confirmed and astronomers have since observed these channels. The tendency, however, of modern views is in the direction of incredulity.

THE ARMY MEDICAL REPORT FOR 1907.

THE Army Medical Report for 1907 has been issued and certain of its features are noticed in a leading article on p. 1086 of our present issue. It contains other noteworthy details, prominent amongst which is the section dealing with malarial disease, which, it is satisfactory to note, has decreased in India, although its prevalence during the year 1907, as indicated by the admission ratio per 1000 of strength, exceeded that of the year 1905, the numbers being for 1905, 111·9; 1906, 179·5; and for 1907, 153·8. Under the head of enteric fever in India the report states "that the usual seasonal prevalence in the spring and autumn was much less marked, the cases being more evenly distributed throughout the year." The investigations carried on at the Central Research Institute at Kasauli as to the part played by "bacillus carriers" in spreading the disease agree with the results obtained by Koch and others in Europe. As it has been shown that the discharge of bacilli is intermittent, intervals of 80 days occurring, and that in convalescents it persists for several months, sometimes many years, and that in Germany one authority asserts that 1·5 per cent. of the general population are "carriers," the report urges "that where dozens of cases occur daily ..... to detect all slight cases of enteric, to examine and repeatedly examine the excreta of convalescent and suspected carriers, plus persons handling food in kitchens, institutions, bakeries, dairies, sweet manufactories, &c., &c., while an ideal to be aimed at, is at present as impracticable in the prophylaxis of typhoid, as it is in the case of diphtheria, influenza, pneumococcus, meningococcus, or cholera 'carriers.'"

The result of rigid sanitary precautions in the garrison of Bermuda was rewarded by the very light list of only 14 cases of enteric fever, including women and children, notwithstanding an exceptionally heavy outbreak of the disease among the civil population. The insanitary conditions in the town of Hamilton and the endemic prevalence of the disease, sometimes in so mild a form as to render accurate diagnosis difficult, if not impossible, and the constant influx of visitors from the American continent, many of whom may well be typhoid carriers, add to the responsibility and difficulty of the sanitary authorities in dealing with this disease. Valuable scientific work is being carried out in the bacteriological laboratory at Pretoria with a view of determining what proportion of enteric fever occurring in South Africa is due to bacillus typhosus. So far it has been found that out of 35 strains of the typhoid bacillus group, isolated from various sources, 20 per cent. of the total were atypical, including one case of bacillus coli communis.

The report shows the actual deaths from pulmonary tuberculosis to be extremely few in the military service as compared with the male civil population. It is, however, justly pointed out that regard must be had to the invaliding figures, and it should be borne in mind that the ratio represents only young male adults living, for the most part, under favourable sanitary conditions, and who but recently, after careful medical examination, showed no trace of the disease, which it seems is not unfrequently latent under apparently healthy conditions.

Investigations into an epidemic of sore-throat at the Duke of York's School showed that the disease was non-diphtherial in type among the boys, while in the cases of attendants, washerwomen, and so on, pseudo-diphtheria bacilli were found, and in two instances of persons indirectly associated with the school the throat swabs gave pure cultures of diphtheria bacilli. These facts may explain why in cases diagnosed as diphtheria severe symptoms have been followed by prolonged convalescence and frequent occurrence of paralysis. In some cases recovery has been quick and uninterrupted; in others symptoms of rheumatism have almost invariably succeeded.

It is curious to note that the death-rate from diseases of the digestive organs is above that of civil life, but it must be noted that cases of hepatitis and liver abscess, probably contracted in the tropics, are included. It is suggested that less stress is now laid on dental caries as a reason for invaliding and that the routine dental examination is not being followed up.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Oct. 9th, 1830.

AMPUTATION OF THE LEG AT THE KNEE-JOINT.

AT the sitting of the Académie des Sciences on the 13th of September, M. Velpeau, of the Hôpital St. Antoine, read a paper on the above operation, which, according to him, is not so dangerous as is generally believed, and ought even to be preferred to ordinary amputation, where the joint is healthy. He has himself performed it twice with complete success, once in January, 1830, on a young man affected with necrosis of the tibia, part of which it was M. Velpeau's intention to remove, when he found, after having made a transverse incision, that the bone was throughout diseased, so that it was necessary either to perform the amputation of the thigh, or the exarticulation of the leg; he preferred the latter, as, in fact, a part of it was already performed by the transverse incision. The operation did not afford any-thing of interest; the wound speedily healed, and the patient was quite well after eight weeks. The second case was that of a robust man, 29 years of age, with fracture of the left leg: when he was brought into the hospital, twenty-four hours after the accident, considerable hæmorrhage had taken place, and almost the whole of the limb was covered with ecchymosis; the fracture appeared, however, simple, and there was but a small wound at the inner ancle, and scarcely any swelling. The limb was carefully dressed, and a favourable result of the case was anticipated, when, on the following night, the patient was suddenly seized with furious delirium, the cause of which could not be ascertained until the fifth day, when it was discovered that mortification began to take place, and three incisions having been made over the fracture, the tibia was found to be minutely fractured, and its fragments surrounded by a gelatinous mass of very offensive smell. Profuse suppuration of an unhealthy kind ensued, accompanied by excruciating pain and hectic fever, so that the removal of the limb did not admit of any longer delay. The success of the above case determined M. Velpeau to perform the exarticulation of the leg at the knee-joint, as amputation below it was inadmissible. The operation took place on the 4th of June, and the patient was perfectly cured on the sixtieth day. The third case which had come under M. Velpeau's observation, was that of a young man whom he happened to examine at the Bureau Central, and who in his twelfth year had undergone the operation at the Hôpital des Enfans, on account of gangrene. From these instances, and others related by medical writers, M. Velpeau concludes, that exarticulation of the leg ought not to be entirely excluded from the index of surgical operations, as it has hitherto been done by most modern writers on surgery.

QUACKERY.—"In the year 1782, that extraordinary empiric of modern days, Dr. Graham, appeared in London. Among the furniture of Dr. Graham's temple was a celestial bed, which, he pretended, wrought miraculous effects on those who reposed in it; he demanded for its use during one night, one hundred pounds, and such is the folly of wealth that several personages of high rank acceded to his terms."—*Hone's Table Book.*

THE LANCET.

LONDON: SATURDAY, OCTOBER 10, 1908.

The Introductory Addresses.

AT the beginning of October in each year there arises a flood of oratory issuing from most of the medical schools and intended to assist the medical student on his onward course. Some of the medical schools, however, have discontinued the custom of an introductory address, the advantages or disadvantages of which we need not now discuss. When the number of medical schools is considered it is not surprising that the same subjects are often dealt with year after year. At the same time there is a really remarkable variety in the matters discussed and in each recurring October we find fresh illumination on the many problems of medicine.

The Huxley lecture, which is delivered biennially at Charing Cross Hospital, deservedly holds a high position among the introductory addresses, and the lecture delivered by Sir PATRICK MANSON dealt very felicitously with the important subject of tropical medicine which he himself has done so much to advance and to bring to its present high state of perfection. He showed that while many of the diseases with which we are acquainted in temperate climes are also known in the tropics there are various diseases peculiar to warm climates. Most of these tropical diseases are caused by organisms which require a high temperature for their successful passage from host to host, or which need animal intermediaries which flourish only in high atmospheric temperatures. As these conditions only occur in tropical or subtropical countries the diseases produced by germs or parasites such as these can arise and spread only in warm countries or in warm seasons. A living intermediary is needed in malaria, yellow fever, trypanosomiasis, and filariasis. In ankylostomiasis no intermediate host is required, but the parasite needs a warm moist nidus for the development of the egg. It is thus clear that for the study of tropical diseases much knowledge is required not needed for most of the pathology of temperate climates. As Sir PATRICK MANSON mentioned, a school of tropical medicine should include a protozoologist, a helminthologist, and an arthropodologist in addition to the usual lecturers. Most tropical diseases are due to protozoa or helminths, and therefore the assistance is needed of those who have specially studied these branches of zoology. The intermediary hosts of these pathogenic protozoa and helminths are nearly all insects, ticks, or crustaceans and therefore the services of an arthropodologist are required. Sir PATRICK MANSON presented a table showing all the known diseases which may be called tropical, with the causative agents to which they are due and the mode in which transmission occurs, and the list was remarkably long. We do not remember to have seen a better presentation of the importance of the diseases of warm countries or a more powerful plea for their adequate study. At the Victoria University, Manchester, Sir T. CLIFFORD ALLBUTT spoke mainly on hospital management. He urged the necessity of the recognition of the fact that the members of the medical staff of a hospital are not the employees of the hospital board but they should be looked upon as equal partners in the management of the hospital. It is not uncommon to hear the benevolent services of a hospital staff depreciated on the ground that its members are paid by the opportunities, reputation, and fees which their position carries with it, and Sir CLIFFORD ALLBUTT showed that this is very far from being true. He spoke of the great value of pathology and suggested that pathological laboratories should be more closely connected with the wards than is generally the case. Lastly, he showed that medicine is now beginning to take its true place in the State, and he urged the need of the appointment of a Secretary of State for Medicine, on a par with the Secretary of State for War. He dealt with the problem of medical education and the need for a one-portal method of qualification in order that the universities may be able to devote themselves to real training and not merely to the teaching of text-books and the testing of text-book knowledge. At St. Mary's Hospital Sir JOHN BROADBENT dealt with the future of medicine and considered that although much of the present-day work of the physician might be taken out of his hands by the discovery of vaccines and serums, ample work would still remain for the physician to do in the general management of the patient and especially with regard to the treatment of such conditions as neurasthenia, where no vaccine could avail but where a general control of the life and habits of the patient would always be required. He quoted with approval the advice given by BACON in his "Regimen of Health," where he says that some physicians are "so pleasing and comformable to the humour of the patient, as they press not the true cure of the disease," while others think so much of the disease that they disregard the condition of the patient, and he advises the choice of "one of a middle temper, or if it may not be found in one man" he suggests that the patient should "combine two of either sort." The second part of his address Sir JOHN BROADBENT devoted to a consideration of out-patients. He urged that the ordinary medical treatment should be supplemented by agencies for looking after the families of patients who really need treatment as in-patients and who yet persist in continuing at their work because the cessation of their occupation would mean the starvation of their families.

At St. George's Hospital Dr. CHARLES SLATER took for his subject the importance of the laboratory in medical education and practice. He claimed a fuller recognition by the State of the value of medicine in the prevention of disease. The public and the State have been accustomed to pay for cure, but they have not yet learned that it is far better to pay for prevention and that to prevent the occurrence of disease is worth a hundredfold more, even in hard cash, than the cure of the cases of disease when they have occurred. He suggested that it is customary too often to look upon the pathologist merely as a servant of the

physician, he being asked to report on pathological products often without any information being given to him of the clinical details. Dr. SLATER suggested that the clinical pathologist and the physician should consult together by the bedside on equal terms and that the conclusions arrived at should be the joint result of their deliberations. The development of medicine as a science was the theme of the address given by Dr. A. M. KELLAS at the Middlesex Hospital, and he traced the chief theories of disease from early times to the present day. He then dealt with the relation of chemistry to medicine and showed that a full comprehension of the physiology of the body cannot be obtained until we know the composition of proteins and other obscure organic bodies, and he pointed out that with regard to pathology this knowledge is equally important. He mentioned the enormous numbers of atoms entering into these complex molecules, and emphasised the fact that our lack of knowledge of the true chemistry of the body is delaying the progress of medicine. Real progress in these difficult subjects could best be made by the adequate endowment of several professorships, and for this only a moderate sum would be needed whilst the results would fully compensate for the cost incurred. Dr. HARRINGTON SAINSBURY, at the London School of Medicine for Women, spoke of the importance of the individual cell in both medicine and surgery. Surgery is yearly extending its bounds and claiming more and more of the grosser structure of the body, but the cell, its powers, and its potentialities must ever remain the realm of the physician, for the individual cell is beyond the claim of the surgeon. Yet even in surgery the cell plays an essential part. In vain will the fragments of a broken bone be placed together if the osteoplastic cell be not ready to exert its powers; the tying of a cut artery is useless if the plastic properties of the cell are not employed to close the vessel. Further, he urged the importance of not over-valuing the drug treatment of disease, though he claimed for drugs that the powers which they do possess should be recognised. The public look upon a prescription as the essential part of treatment, but the true physician must recognise the importance of other methods of healing, and amongst these the influence of the mind must not be forgotten. Dr. SAINSBURY concluded his address by urging the need of cultivating all the powers of the mind, for in the study of medicine there is no small risk that the student may neglect all that stands outside the medical curriculum. The student should acquire and maintain an interest in poetry, in art, or in music, to consider only the æsthetic side of the mind, but in addition the student must not forget that the ethical and the religious aspects of humanity need also consideration and culture, for they are of even more importance than the æsthetic. All these mental potentialities need culture for their growth, for they will atrophy if they are disused.

From these glances at some of the opening addresses at the medical schools it can be seen that the lecturers all appreciate the dignity and importance of medical studies, they suggest the lines along which progress must go, they urge the need of due attention to the claims of science, and they point to the rich reward to humanity which follows the teaching and practice of medicine. At most of these addresses eminent laymen were present and we hope that they laid to heart the teaching which they there heard and that they are in consequence more alive to the economic importance of medicine. That the new students will remember all the valuable advice poured forth at these addresses is too much to expect, but at least it may be hoped that they were influenced for good and that they will study their profession the better for hearing of the high ideals which have been placed before them.

The Professional Status of Anæsthetists.

RECENT discussions which have arisen have associated the ever-present question of how to prevent deaths occurring during anæsthesia with the present position of those members of our profession who have adopted the specialty of administering anæsthetics. Dr. F. W. HEWITT, physician-anæsthetist to St. George's Hospital, stated at the meeting in Dublin of the British Association for the Advancement of Science views practically identical with those which he advanced some weeks back at the Medico-Legal Society. His paper was published in THE LANCET of Sept. 19th, p. 873, and from this it will be seen that his contention is that deaths from anæsthetics are in some cases due to want of skill or experience on the part of those who give them, and he pleads for a legal enactment which shall limit the practice of giving anæsthetics to those who possess medical diplomas. But it is rightly pointed out that even this safeguard is not sufficient since there are many of the qualifying bodies which grant degrees or diplomas enabling the holders to practise, but which do not insist upon candidates for their qualifications producing evidence of even a modicum of knowledge of the action and uses of anæsthetics. To remedy this serious blot upon our scheme of medical education it would be necessary for the General Medical Council to advise the Privy Council to insist that all qualifying bodies should fall into line with the English Colleges and should require everyone seeking to practise to show his competence, by examination or otherwise, to administer anæsthetics. We concur in hoping that some such step will be taken in the near future.

There is some reason to believe that the medical student of to-day is influenced by the appraisement set by the controlling powers upon the bewildering number of subjects which he is expected to master during his hospital course. Anæsthetics have less allurement than let us say bacteriology, and examinations of the dark passages of the human frame offer more interest to the beginner than acquiring a perfunctory acquaintance with the processes of narcosis. So that when, as is alleged, the hospital authorities belittle the importance of anæsthetics as a part of the curriculum, the students, not slow to avail themselves of the opportunity offered to them to lighten the burden which they perforce must bear, leave anæsthetics severely alone. The writer of a letter in the *Times* who adopts the *sobriquet* of "A Hospital Anæsthetist" tells us that hospitals are sometimes badly equipped in the department of anæsthetics, and that the men who undertake the duties of anæsthetists to hospitals and of teaching students are often juniors who regard

the post as a stepping-stone to other and more lucrative positions upon the staff. He alleges that there is little inducement for seasoned workers in the field to compete for the appointment of anæsthetist because they receive no adequate status and their work is brushed aside as being of scant value. Thus, we are told, anæsthetists do not enjoy the privileges accorded to physicians and surgeons, to assistant physicians and assistant surgeons, and to officers such as surgeon-dentists who control special departments. "A Hospital Anæsthetist" complains that surgeons ignore the usual amenities which should exist among colleagues, and in the case of the anæsthetists dictate to them what they should do and withhold from them alike courtesy and appreciation of their special knowledge of their department. The natural result of this, we are asked to believe, is that the public as a body do not hold the anæsthetist in much repute and are not encouraged by consulting surgeons to call him in as an expert when dangerous or critical operations have to be faced. The surgeon is sought with care while the anæsthetist is chosen at haphazard is practically the complaint of the writer to the *Times*. The view is much the same as that expressed by Dr. HEWITT. He considers that the *personnel* and the system of teaching at some hospitals are capable of improvement, and circumstances can hardly have failed to bring home to the minds of all of us that in some instances there is a lack of organisation in this department. This has led to public comment and undoubtedly a vast amount of misapprehension exists upon the subject of anæsthetics, the bulk of the public being unaware of the importance of the work of the anæsthetist. It is usual to hear of the wonders of modern surgery and the triumphs of the scalpel; how often is it recognised that a skilled and experienced anæsthetist has fought for his patient's life through a weary hour or more and has enabled his eminent colleague the surgeon to accomplish another victory? For the sake of the patient the potential dangers of the anæsthetic are minimised, and in some cases this may lead to the anæsthetic being given by men sound, no doubt, in the knowledge of their profession but lacking in a scientific grasp of the facts underlying the rules governing narcotism. It may happen that such men undertake the duty reluctantly and only yield to the entreaties of a nervous patient who dreads the advent of a stranger, while it is not recognised by the public that a rule-of-thumb knowledge of anæsthetics is not skilled anæsthetisation.

While all are agreed that medical students ought to be taught more fully the recognised methods of administering anæsthetics, the amount which they should be taught and the due relations of the specialist anæsthetist to the general practitioner make up between them a most delicate question. To administer anæsthetics with complete knowledge in difficult cases and with the absolute minimum of risk demands scientific knowledge and judgment begotten of experience—those who can do it ought to be held in the same regard at their schools and hospitals as any other specialist attached to the institution. But for this very reason every medical student cannot become an anæsthetist of this class; he cannot in the present state of the curriculum spare the necessary time for the training, he may lack opportunities for the teaching, while he may not have the individual aptitude for an arduous and responsible branch of his profession. All that can be done for him, as yet at any rate, is to see that he is thoroughly grounded in the principles of giving anæsthetics in uncomplicated cases, and the specialist anæsthetists will no doubt approve of such a man giving anæsthetics, if only because it is he whom the public will in many cases employ. There are vastly more operations, large and small, where anæsthetics are used than it is possible that any specialist class could cope with, while rural neighbourhoods, towns of under 5000 inhabitants, and parochial authorities cannot possibly support the services of a member of such a class. For the present all that can be done is to make the teaching in anæsthetics at all our schools thorough, to insist upon all students learning the principles of the administration of anæsthetics as a compulsory subject, to raise the position of the anæsthetist upon our hospital staffs to that of the other members of the honorary staff, and to trust that such reforms will result in the diffusion of generally adequate skill.

The Health of the Army.

THE Army Medical Report for the year 1907 recently issued has excited more than usual general comment. This is probably due to the fact that during the present period of reorganisation and transfiguration of our land service military affairs have aroused greater interest than they do normally in the public mind. The medical organisation of our army has come in for its share of this increased attention, with the result that the public is able to realise with PLATO the importance of the influence of the physician in matters of State. The report deserves the wide comment that it has obtained, for it bears record to good and careful work on the part of this department and enables us to perceive that a deep debt of gratitude is due to the men of science and men of affairs—amongst whom SIDNEY HERBERT and EDMUND A. PARKES are the most famous—who after the Crimean war founded, in the face of strenuous opposition, the Army Medical School. One section alone of the present report affords a triumphant vindication of the foundation of that school—namely, that which deals with the almost complete stamping-out of "Malta fever." This fever but a few years ago was a mysterious disease of unknown origin, levying a heavy toll on our regiments, and it may be counted one of the greatest victories of modern science, systematically equipped and organised, in general, and of the medical department of the army in particular, that this toll will no longer have to be paid. The official statistics proving the reality of this triumph of therapeutics have been so recently before our readers that we need not recapitulate them here.

We publish in another column an abstract of the report on individual diseases as they affected the troops in 1907, but it will be convenient now to draw attention to two outstanding causes of sickness in the army. The amount of venereal disease appears always to vary in every part of the world from various reasons, some easily traceable, and others unknown. It is a matter of great regret that the entries for 1907

amounted to over 208 per 1000 of the strength of the force employed in the London district. Such an amount of infection reveals a state of affairs not only deplorable in itself but fraught with danger to the public health, unfortunately not only of this but of future generations, a danger for the mitigation or stamping out of which, in the present state of public opinion, it seems hopeless to look to legislation. The death-rate and invaliding rate from diseases of the heart and circulatory system are high and afford abundant material for study and investigation. It is said, and fairly strong evidence is brought forward to support the dictum, that a soldier of 30 is "at least five years older than a civilian of the same age," and this sudden passing of the soldier into middle age is due to circulatory troubles, but the numerous exceptions to such a generalisation and the fact that the officer class are not affected in the same way would seem to indicate that the admittedly unsatisfactory state of things arises from causes which are capable of being brought under control. We are inclined to believe that a series of causes *acting together* are often responsible: syphilis, alcohol, tobacco, malarial infection, with climatic changes and altered conditions of blood pressure. "As regards the relative importance of the different causes of invaliding, diseases of the circulatory system still hold the first place," as they have done, with one exception, for the past 27 years. While disordered action of the heart in immature recruits may be sometimes entirely functional in its nature "as from a dilated stomach," in which case they ought not to be invalided but detected and cured, we must reiterate the conclusion which we have recently on several occasions expressed in these columns, that, as a rule, it is due to different forms and degrees of cardiac dilatation, which, apart from any valvular defects, leads to regurgitation at the auriculo-ventricular orifice. It would be interesting if we could obtain from the medical records of civil life some data as to the prevalence of diseases of the heart and circulatory system amongst those constantly engaged in arduous labour, as in lifting and removing articles of heavy furniture. We are inclined to surmise that in the case of the soldier it is the intermittent nature of the heavy work, at any rate in the case of persons with fairly sound arteries, that does the mischief.

During the past year important changes were introduced in the scale of rations for foreign stations, which were brought into more uniformity as regards grocery and vegetable rations, the scale adopted being per diem: tea, $\frac{5}{8}$ ounce, or coffee, 1¼ ounces; sugar, 2 ounces; salt, ½ ounce; pepper, 1-36th ounce; fresh vegetables, ½ pound, or dried vegetables, 2 ounces, and this must be considered together with the purchase value of the messing allowance granted to each soldier. The meals are now served to the mess collectively in rooms and dining halls specially set apart for the purpose, which allows of a greater variety in foods and obviates the dirty and unhealthy practice of using the men's dormitories for meals. Steady, if slow, improvement is reported in the comfort of barrack buildings from year to year. Reconstruction and remodelling of the drainage systems have been widely proposed and in some instances inaugurated, soldiers' married quarters have been improved and extended, the water-supply has been dealt with, lavatory accommodation increased, and plunge- and shower-baths erected, and the gravity of the question of sewage disposal has been recognised. Should the hygiene and sanitation of our army ever attain the standard now indicated the result will more than reward and justify the care and expense. The present state of affairs is a matter of gratification, at least when compared with that revealed half a century ago after the Crimean war. We must briefly notice, however, a section of the report which appears to us both gloomy and unsatisfactory: this deals with the all-important subject of recruiting, touching essentially and, as we have on several recent occasions emphasised in these columns, indicating the grave problem of the health and physique of the young adult male population. Last year, roughly speaking, nearly 300 per 1000 recruits were either rejected on inspection or found unfit within three months of enlistment. Notwithstanding that a fixed standard of weight has been abolished, that the medical examiners have passed all who came up to the physical requirements of infantry of the line, although they were afterwards rejected by the recruiting officer because they were too small for the corps of their choice, that "a more lenient standard of dentition" has been adopted, "that varicocele is viewed with greater leniency now than in past times," and that men are now accepted "with only one-sixth of the normal acuteness of vision in one eye, provided that the other is normal," "the majority of recruits were growing lads ..... 95 per cent. of the total out of work at the time of enlistment ..... in many instances suffering from want of food ..... most of the men will not be capable of doing the work of a mature soldier for at least two years. ..... Immaturity has always been the outstanding defect of our recruits, and in this respect little or no improvement was shown during the year." Both under the head of recruiting and invaliding the unsatisfactory result of employment of inexperienced medical men is alluded to. It is impossible to exaggerate the importance of these points, being, as they are indeed, the finger on the pulse of the national health. Recent investigations have given an uncertain answer to the question whether the national health was improving or deteriorating. We should like to see a small practical committee appointed which would make up its mind and give us a definite opinion on this point. Practical experienced medical men and employers of labour could tell us more real truth on this subject than philanthropists, statesmen, and men of science, with their own axes to grind and their own theories to establish at the expense of facts.

Annotations.

"Ne quid nimis."

RECENT CHANGES IN THE NAVY.

WE are glad to notice that the new medical director-general of the navy has lost no time in strengthening the Haslar course. During the last session the examination of recruits, the administration of anæsthetics, and other subjects coming within the sphere of a naval surgeon's duties have been systematically taught. We observe with pleasure that on the whole the recent changes in the victualling of the navy have been attended

with improvement, both as regards variety of food and cooking, which cannot fail to affect favourably the general health of the men. As we have pointed out before, it will be practically impossible to do so well in very small craft, torpedo boats, and so on. Here, however, we have no doubt that the practical adaptability to environment of the "handy man" will assert itself and the best possible be made of surrounding circumstances. Compared with the dietary of his predecessors the *menu* of the modern blue-jacket is a *menu de luxe*, at any rate in large ships, where it has been found possible to adopt the general mess system, although, as we stated in a leading article last year, we regret that the meat ration was reduced. Earnestly desiring, as we do, the welfare and progress of the Naval Medical Service we hope that some other reforms which we have suggested recently may soon follow and that some of the best stamp of young medical men may be attracted to the Service afloat.

HISTORICAL ASSOCIATIONS OF ARSENIC.

IN a series of articles in the *Pharmaceutical Journal* Dr. J. Gordon Sharp deals in an interesting manner with the history of arsenic from the time of Hippocrates (B.C. 460–357) to the present day. Geber was the first to prepare white arsenic in Europe in the eighth century, at a time when the diabolical art of poisoning was becoming popular as a means of removing a foe or rival. Arsenic was eagerly welcomed by the poisoner owing to its solubility and freedom from odour and taste, and it was most extensively used for nefarious purposes during the fifteenth and sixteenth centuries. It was through arsenic that the Borgias attained their unenviable reputation, and so great was the fear of it that makers of antidotes and amulets drove a thriving trade. In Italy two women acquired notoriety as poisoners during the seventeenth century, Tofana, after whom a solution of arsenic was named "Acqua Tofana," and Beatrice Spara, whose pupil Exili afterwards became suspected of being concerned in many cases of poisoning that had occurred in Rome and fled to Paris. There he founded his art and became the first of a long series of professional poisoners. One of his pupils, Sainte-Croix, passed on the knowledge to his inamorata, Marie Marguerite d'Aubray, afterwards wife of the Marquis de Brinvilliers. This base woman visited patients in the Hôtel Dieu Hospital at Paris in the guise of charity with the object of poisoning them by arsenic, and subsequently poisoned her father and two brothers. Among other pupils of Sainte-Croix were Penautier, treasurer of France, and Cardinal de Bonz, both of whom employed their knowledge to remove those who stood between them and their ambition. The unholy trade was then carried on chiefly by midwives, nurses, perfumers, and fortune-tellers until well into the eighteenth century. Poisoning has never been popular in the British Isles, so that very few cases of poisoning by arsenic have been recorded. In the Middle Ages men were terror-struck because no test was known for the recognition of this deadly agent. This reproach was removed when Black, the celebrated chemist, in 1752, at the trial of Mary Blandy, gave two tests for arsenic—viz., by reduction to the metallic state by heating with black flux in a tube, and by deposition of the element on copper. Afterwards Orfila (1787–1853), Christison, Alfred S. Taylor, Casper of Berlin (1796–1864), and the late Sir Thomas Stevenson helped to establish toxicology on a firm basis and placed the detection of minute traces of arsenic beyond dispute chiefly by the aid of Reinsch's and Marsh's tests. It is not known with certainty who was the bold individual who reasoned that there might be some valuable remedial properties even in the deadly "Acqua Tofana" if administered in suitable doses. Dr. Sharp hazards the opinion that Thomas Goddard (1617–1674), one of Cromwell's physicians, was among the first to employ it in medicine. His view on the subject would appear to have been noised abroad, with the result that several remedies were sold, at first secretly and then openly, for the then universal affection—ague—under the names "tasteless ague drops," "Asiatic drops," and "Asiatic pills." Authentic history of the medicinal use of arsenic, however, commences with Fowler's solution. In 1786 there appeared a small work[1] by Thomas Fowler, M.D., physician to the general infirmary of the county of Stafford, wherein he described how he was led to introduce the preparation. A specific for ague, under the name "tasteless ague and fever drops," was being used in the Stafford Hospital and Dr. Fowler and Mr. Hughes, the apothecary, identified it as an arsenical preparation. After many trials they succeeded in devising the formula which bears Dr. Fowler's name, and it was officially recognised in the London Pharmacopœia of 1809. The formula for Donovan's solution of arsenic and mercury was first published in the *Dublin Journal of the Medical Sciences*. It is of interest to note that atoxyl was first prepared by the French chemist Béchamp in 1863, but its medicinal properties do not appear to have been studied until the last few years. Its employment in sleeping sickness was suggested by the known usefulness of arsenic in protozoal diseases, following the treatment of David Livingstone who recommended arsenic in tsetse fly disease. Syphilis is now looked upon as belonging to the same category of diseases and atoxyl is being employed in the treatment. Evidence has been brought forward to show that the favourable results obtained with atoxyl in these diseases cease after a time but that they are renewed by administering mercury.

JEWISH LYING-IN MOTHERS OF THE WORKING CLASS IN FRANKFORT AND IN THE EAST-END OF LONDON.

A CORRESPONDENT writes referring to the articles now being published in THE LANCET upon the care of infants in London: "I see that allusion is made to the question of mothers who are expected to go out to work shortly after childbirth, and the suggestion is, of course, put forward that in some instances the mother, who should be lying-in, is compelled by the exigencies of the situation to get up and to work before she is in a fit state so to do. It is, indeed, said to be a matter of more or less common knowledge that one of the reasons why so many babies of the working class are artificially fed is because the mother is not able to take a long enough rest during the lying-in period, the consequence being that the breast milk dwindles or becomes impoverished." We are not quite prepared to accept this large deduction from admitted facts, but it appears that in England, except among certain of the Jewish communities, no steps have been taken to permit the working mother to have a sufficient rest after child-bearing. In a paper read by Miss M. le F. Boileau before the National Conference on Infantile Mortality held in London in the spring of this year there was described a system in vogue in Frankfort for supplying help to poor mothers during the lying-in period or illness. A register is kept of such female helpers as wish to hire themselves out for housework in cottage homes in those cases in which the mother is unable to attend to her own work, and a committee of women manages the organisation. The female helper is required to fulfil all the duties that fall to the lot of a housewife, but she cannot minister to the very poor as

[1] Medical Reports of the Effects of Arsenic in the Cure of Ague Remittent Fever, and Periodic Headaches. 1786. London: J. Johnson, 77, St. Paul's Churchyard.

she is paid by the family employing her, save where a well-wisher bears the expense for a woman unable to do so herself. In all cases of lying-in or of prolonged illness on the mother's part a member of the committee visits to make sure that the work is being properly done. This system is stated to have been very successful in Frankfort and, so far as lying-in mothers are concerned, has been adopted by the Jewish community of the East-end of London. The lying-in woman of the working class in England, even when she is able to pay for what she needs, is often in a precarious position. It is not easy to procure female help of any kind and, of course, it is far more difficult to obtain the assistance of a woman possessing skill and experience. It is well known that the Midwives Act does not meet the situation.

THE AGE OF PARENTS A FACTOR IN THE ETIOLOGY OF RICKETS.

Dr. P. Gelati recently studied the records of the out-patient clinic for children in connexion with the Parma medical school and found (says *La Semaine Médicale* of Sept. 23rd, quoting from the June number of *Pediatria*) that out of 3121 little patients who were taken for advice during a period of about four years 615 were rachitic, that is 19·71 per cent. Contrary to expectation he found that those coming from country districts were more frequently affected than those who lived in towns, the percentage of rachitics being 17·26 for the town-bred children and 24·77 for those from rural districts. Regarding the influence of the parents' age, the statistics showed unmistakably that the older they were at the time of the children's birth the more likely the children were to show signs of rickets. Thus in the case of parents below 20 years of age the percentage of rickety children was only 11·6; in that of parents between 20 and 30 years of age, 19·2; and in that of those over 30 years of age as much as 22·2. Though the age of the parents has such a marked influence on the frequency of rickets this factor is of far less importance than that of breast-feeding and this was fully proved by Dr. Gelati's researches. It is worthy of remark that he found that rural parents were less prolific than those living in towns.

READING IN BED.

READING in bed at night is, speaking generally at all events, an unhealthy practice as we have previously had occasion to remark[1] and there is fortunately a tolerably universal consensus of opinion amongst the public that the habit is better avoided. Probably the fear of its being the cause of a conflagration of the bed curtains and perhaps of the whole house has had something to do with the feeling against it in the past, and the danger no doubt was an obvious objection in the days when flimsy bed curtains were fashionable and when the electric light, which is practically free from such danger and which does not vitiate the air as gas and oil lamps do, was not available. Dr. Hugo Feilchenfeld of Berlin has recently made a study (recorded in the *Medicinische Klinik*) of the subject with the object of finding out exactly what harm is likely to result from reading in bed and in what circumstances the practice is most injurious. He finds the chief danger is to the eyes, partly because the light used is frequently insufficient and so placed as to dazzle them, and partly because it is difficult to hold the book so that full benefit is obtained from the use of both eyes. This is more particularly the case when the reader is lying on one side. Again, there is generally a temptation to hold the book too close to the eyes and this of itself tends to induce myopia. Very particularly is this result to be feared in the case of young persons whose eyes are not fully developed. For this reason boys and girls under 18 should be strictly forbidden to read in bed. Of course, persons suffering from errors of refraction—myopia, hypermetropia, astigmatism, and so on—are liable to increase the trouble by indulging in the practice. Notwithstanding all the objections which can rightly be urged against reading in bed, there are many aged, anxious, worried, and bedridden people to whom it would seem cruel to deny what may perhaps be almost their only luxury for fear of inducing some slight error of refraction. In these cases care should be taken that the light should be sufficiently brilliant, the eyes being shaded from it, and that the patient should lie on his back with the head and shoulders raised. In this way the dangers may be minimised. Referring to reading in bed in the daytime in ordinary cases of illness, how often do we see a patient, the foot of whose bed is towards the window, struggling with a book or newspaper held between himself and the light so that his eyes receive the glare of full daylight while the only illumination of the printed page is that due to the diffused light in the room! A suggestion that during the daytime or part of the daytime the patient's head, together with the bolster and pillows, should be transferred to the foot of the bed is often gratefully received, as not only is reading rendered much more pleasant but the change of position and of aspect night and morning is almost always agreeable, relieving as it does to some extent the irksomeness of confinement to bed.

[1] See THE LANCET, Dec. 8th, 1888, p. 1145.

TUBERCULOUS SEPTICÆMIA.

AT a meeting of the Académie de Médecine of Paris on July 28th M. L. Landouzy and M. L. Laederich called attention to a form of tuberculosis—tuberculous septicæmia—which is not generally recognised. They related the following case. A thin, miserable-looking boy, aged 16 years, was admitted into hospital on July 17th, 1907. Three months previously he went to Paris to assume the occupation of groom and at once began to waste. He soon contracted measles which ran a benign course. Four weeks later he was feverish and suffered from pains in the joints which compelled him to keep to bed. The pains began in the left ankle-joint and then most of the large joints were attacked. On admission, on the fifteenth day, the temperature ranged irregularly from 100·4° to 103·1° F. The right knee was the only joint which remained affected; it was hot, swollen, and very painful on palpation and movement. But what attracted most attention was polymorphous erythema on the trunk and thighs. On the trunk it was papular and circinate; on the thighs nodular and indurated. Examination of the heart showed prolongation and muffling of the first sound at the apex and slight undulation of the chest wall. There was no cough, but careful examination of the thorax revealed induration and congestion at the left apex. In spite of the administration of large doses of salicylate the fever persisted. The knees and wrists became swollen and painful. The erythema disappeared after administration of potassium iodide. But a few days later it recurred and after some days regressed. The arthritis diminished but at the same time the cardiac affection increased. The first sound became blowing, the heart enlarged, and the undulation of the chest wall increased (signs of mitral insufficiency and adherent pericardium). During August several hard and tender nodules of the size of lentils appeared in the occipital region and seemed to be attached to the bone. After some days they disappeared to reappear a fortnight later. In the same time three or four similar nodules appeared on the elbows. A few days later all the nodules permanently disappeared. Simultaneously signs of pleurisy appeared, first on the right side, then on the left. Exploratory puncture yielded only a

few cubic centimetres of sero-fibrinous fluid containing numerous polynuclears and some lymphocytes. In September another transient attack of polymorphous erythema occurred. A few days later hard nodules, at first tender, appeared over the patellæ to which they appeared to adhere. In October a fresh attack of bilateral pleurisy occurred. During all this time the temperature ranged from 100·4° to 103·1° and the patient rapidly wasted and became extremely pale, but the pulmonary lesions showed no signs of progress. In November the heart failed: the pulse was thready and there was acute dyspnœa; the liver was large and tender and a little ascites was present. Death occurred on Nov. 15th. Though tuberculosis was suspected it was not demonstrated during life. The oculo-reaction was positive, but the cytology of the pleural effusion was not characteristic and cultures of the blood on various media and inoculations of guinea-pigs were negative. At the necropsy only one organ showed lesions which were tuberculous to the naked eye; at the apex of the left lung was a grey translucent granulation of the size of a millet seed which microscopically showed the typical structure of a tubercle. Two tubercle bacilli were detected in it. At the base of the lung was a caseous tubercle of the size of a hemp seed. In none of the other organs were any lesions found which to the naked eye or to the microscope presented any nodular structure. The pleuræ showed some adhesions. The heart was much hypertrophied (580 grammes) and dilated. It was completely united to the pericardium by fibrous adhesions without any nodular formation even to the microscope. On the free borders of the mitral valve was a collar of very fine papillomatous vegetations. On the tricuspid valve were similar but less developed vegetations. The aortic valve was covered with irregular vegetations not so finely papillomatous as those on the mitral valve. Under the microscope all these vegetations showed a loose slightly fibrillar tissue rich in cells (lymphocytes and large connective tissue cells). The tubercle bacillus could not be found in them. There was a large nutmeg liver. In the pericranium no trace of the nodules present during life could be found. Similarly, the synovial membranes of the knees showed no traces of inflammation. On the contrary, the patellar nodules were present. They consisted of a wall of connective tissue containing abundant cells and a cavity filled with a substance like that found in hygromas. In the wall two tubercle bacilli were found. This case, like many recent observations, enlarges our conception of tuberculosis and shows that lesions may be produced which differ widely from those recognised and may spontaneously disappear.

THE COMPOSITION AND PHYSICAL PROPERTIES OF RENAL CALCULI.

IN the *Biochemical Journal* for August Dr. J. Sydney Rowlands reports the results of his investigations of a series of 22 calculi, which show that there is nothing in the appearance of a calculus that will give a trustworthy clue to its composition. The pigmentation, surface, and hardness which are usually relied upon for the classification of calculi are exceedingly untrustworthy, and it is by chemical analysis alone that their nature can be determined. The work has resulted in the discovery, at least so far as this series is concerned, that uric acid and its salts are very rare constituents of calculi. In 19 of the stones examined they were absent and in the remaining three only traces were found. Of equal importance is the unexpected fact that oxalic acid, combined usually with calcium, was found in each case, although it has hitherto been regarded as a much more rare constituent than uric acid. Phosphates were also commonly present, although they are usually considered as only occasional constituents. In regard to the physical property of hardness, on which stress has been laid by earlier observers, Dr. Rowlands considers that this property is determined by the rate and process of formation of the stone, as a compactly deposited glossy stone is the most difficult to crush, irrespectively of its composition. The degrees of smoothness and pigmentation appear to depend more on the rate of deposition and the amount of pigment present in the urine than on the chemical nature of the stone. The calculi were collected from widely distributed districts in South-west Lancashire and North Wales and were analysed by Haller's method.

THE RECENT SUDDEN HEAT.

THE vagaries of the British climate are never ending and they afford such just cause for astonishment that the national custom of making the weather the preliminary subject of conversation is quite natural and excusable. September, which, meteorologically speaking, is one of the autumn months, gave much better and more summer-like weather last year than the three real summer months, while this year, after behaving in a manner no way remarkable for three weeks and more, it suddenly became so hot that few days and still fewer nights during the preceding three months can be compared with it, and so humid that the effect of the unseasonable height of the thermometer was extremely trying even to the most healthy and robust. And the heat did not end with September, but showed no decided diminution until some days after the birth of October. The figures below show the shade readings of the maximum and minimum thermometer at various places in England, Wales, and Scotland for the five days Sept. 29th to Oct. 3rd and also the difference from the average and the number of hours of bright sunshine. In Ireland the weather was warmer than usual and very humid, but the heat was not generally excessive.

—	Mean maximum temperature.	Difference from average.	Mean minimum temperature.	Difference from average.	Mean temperature.	Difference from average.	Number of hours of sunshine.
	°	°	°	°	°	°	
London	76·6	+14·9	57·0	+10·7	66·8	+12·8	36
Margate	75·0	+14·4	58·8	+ 9·7	66·9	+12·1	44
Bath	75·0	+13·6	54·8	+ 9·3	64·9	+11·4	44
Oxford	75·0	+15·0	52·8	+ 7·4	63·9	+11·2	?
Nottingham ...	76·7	+16·8	53·0	+ 8·4	64·9	+12·6	39
Liverpool	73·4	+15·8	57·2	+ 9·5	65·3	+12·6	42
Aberystwyth ...	75·2	?	61·8	?	68·5	?	49
North Shields ...	74·4	+17·4	54·2	+ 9·0	64·3	+13·2	?
Leith	71·6	+13·1	55·0	+10·4	63·3	+11·9	?
Aberdeen	71·6	+15·7	54·4	+10·4	63·0	+13·0	24

The general character of the weather was far more like the summer than the autumn type, for it was not until it had continued for two or three days that the temperature of the nights fell sufficiently low to permit the formation of the matutinal fog which is one of the characteristics of a fine September. As will be seen by the table, the mean of the daily maximum temperatures was from about 14° to 17° above the average and the mean of the minima about 7° to nearly 11° above. The mean temperature for the five days, which was nearly 67° in London and at Margate, and the extraordinary figure of 68½° at Aberystwyth, was everywhere much higher than the ordinary level for midsummer. The absolute maxima were 80° in some parts of London and also at Manchester, Bettws-y-Coed, and several places in the Midlands. The record for October, which goes back for

nearly forty years, was broken in several parts of England, Wales, and Scotland. As has been already remarked, the heat was accompanied by extreme humidity. During an average fine, hot day in summer the relative humidity (the percentage of the possible amount of water vapour in the air) ranges from about 75 per cent. in the early morning to between 40 and 55 by the afternoon, increasing again to about 75 per cent. after sunset. Last week, however, the figures were not far below 100 per cent., except occasionally for a short time during the afternoon, and then not often below 70 per cent. In very dry countries the amount of humidity with such temperatures as are now under consideration ranges from about 20 to 40 per cent. The conditions that brought such great heat about were fairly simple and would have produced warm weather even in midwinter. The United Kingdom was situated between a large high-pressure system or anticyclone, which lay over the central countries of Europe and the Baltic region and extended across the North Sea, and a very extensive low-pressure area which occupied the space on the Atlantic between the Azores and Iceland. Such a distribution of pressure compelled the air from the southern regions of the Atlantic to flow in a steady stream over this country and as it encountered a cloudless sky when passing over the land its already high temperature became greatly accentuated. During the latter part of the period the stream of warm air from the south ceased in the south and east of England, but as it was succeeded by a gentle flow of warm air from the continent the temperature underwent very little modification.

THE EARLY DIAGNOSIS OF ENTERIC FEVER BY BLOOD CULTURE.

IN 1906 Conradi showed that in enteric fever the bacillus could be cultivated from the blood in much larger percentages of cases by using ox bile as a medium than by using the ordinary media. This has been confirmed by several writers. In the *Boston Medical and Surgical Journal* of June 4th Dr. O. R. Mabee and Dr. A. E. Taft have reported a series of 120 consecutive cases in which the patients were admitted to the Boston City Hospital as suffering from enteric fever during an epidemic in that city and cultures were made from the blood. Fresh ox bile was used as a medium in 90 cases and inspissated bile in the other 30, with equally good results. Five cubic centimetres of the fresh bile were placed in tubes and sterilised in an autoclave for 30 minutes at 15 pounds pressure. The blood was obtained from the lobe of the ear. The skin was cleansed with soap and water and then with 70 per cent. of alcohol. This was allowed to evaporate and then a deep puncture was made with the point of a small scalpel. The blood was collected in sterile pipettes. It was at once transferred to the ox bile before clotting could take place. After incubation at 37° C. for six hours platinum loops of the culture were transferred to plain bouillon (as the dark colour of the bile rendered detection of a few microbes difficult). In most of the cases in which the bacillus was present it was found in the first transfer to the bouillon; if not, other transfers were made from the bile culture after longer periods of incubation. If the fourth transfer showed no bacilli the case was regarded as negative. Of the 120 patients 98 developed typical symptoms of enteric fever. The percentage of positive results in the first week was 95, in the second 17·7, and in the third 14·2. Comparing these results with the Widal reaction in the same cases the percentage of positive results in the first week was five, and in the second and third weeks 100. The percentage of positive results from cultures in the first week corresponds with that of other observers, but in the second and third week is much lower than that of some observers who took a much larger quantity of blood (at least two and a half cubic centimetres) from a vein in the arm. This suggests that the number of bacilli in the blood in the second and third weeks is much lower than in the first. In the 22 cases admitted under the diagnosis of enteric fever, which proved to be incorrect, blood cultures were negative except in one, in which the staphylococcus pyogenes aureus was found. The value of blood culture in diagnosis in the first week of enteric fever, when the Widal reaction is generally absent, is therefore great. A cubic centimetre of blood is then sufficient for each culture, but in the second and third week a larger quantity gives a higher percentage of positive results.

A SCIENTIFIC PRIEST ON THE DANGERS OF HOLY WATER.

THE sanitary dangers lurking in "holy water" have often been referred to by medical men. They have recently been scientifically studied by a monk, Fr. Augustin Gemelli, who is himself a highly qualified medical man. He publishes his results in the *Scuola Cattolica*. Each cubic centimetre of holy water in the basins in the church of Santa Croce, Turin, taken from the surface contained 150,000 microbes, while a cubic centimetre taken from the bottom contained no less than 6,000,000 microbes. He injected this water into animals and found that it always killed them, the causes of death being tuberculosis, colitis, or diphtheria. He does not think a daily cleansing with corrosive sublimate sufficient, but recommends a new form of holy water receptacle so constructed that persons instead of dipping their fingers into it can obtain three drops of water by pressing a button. A vessel of this nature has been placed in the church of Vergiate, Milan.[1] Fr. Gemelli turned his attention also to the grilles in the confessional boxes. Water which had been used for washing these only contained 25 microbes per cubic centimetre and when injected into animals only proved fatal to 10 per cent. of them.

RESULTS OF X RAY TREATMENT OF RINGWORM.

THE recently issued report of the Metropolitan Asylums Board for 1907 contains some interesting statistics bearing on the results of the x ray method of treatment of cases of ringworm in the Downs Ringworm School provided by that Board. It is stated that the duration of residence of these cases in the above-mentioned school before this new method of treatment was introduced averaged about 18 months, whereas the average period of detention of 100 cases so treated in 1906 did not exceed 5·73 months, or, if calculated from the time this treatment actually began, was only 4·49 months. During 1907 the average period of detention of the last 100 cases treated by x rays and discharged prior to Dec. 31st last was 6·21 months. The report states that owing to the demand made in this ringworm school on the apparatus, which has since been enlarged, many cases had to wait some time before being so treated, and if the period of detention in these 100 cases is calculated from the date of the commencement of the treatment it averaged only 5·33 months. It is pointed out that the slight increase of average detention of cases in 1907, compared with that in 1906, was largely due to delay in discharging cases last year caused by small outbreaks of whooping-cough and chicken-pox in these schools. It is satisfactory to note that the number of cases under treatment in the Downs school, which averaged 554 during the three years 1903-04-05, had declined to 339 on Dec. 31st, 1906, and on Dec. 31st last had further fallen to 329. This decrease was in great measure due to the

[1] An apparatus of this kind was described in THE LANCET of Jan. 27th, 1900, p. 252.

marked decline in the necessary period of detention, but it probably also implies a decreased prevalence of the disease. It appears, however, that 737 children were admitted to this school during last year, raising the total number under treatment to 1075; of these, 673 were discharged cured and 46 were discharged at the request of the guardians before they were certified as cured, while two children died. The number of cases treated during the year by the x ray method was 508, of which 465 were discharged definitely cured and 43 were removed from the school at the request of the guardians. Of the 737 cases admitted to this school during the year 518 were classed by the visiting dermatologist (Dr. T. Colcott Fox) as cases of microsporon ringworm and 80 of endothrix trichophyton ringworm, while 139 were undetermined. The undetermined cases included some which were not ringworm, some cases treated before admission and practically cured, and some of ringworm of other regions than the scalp.

IS BERI-BERI IDENTICAL WITH EPIDEMIC DROPSY?

IN our recent annotation concerning the views of the identity of the above two diseases we adduced the evidence of Dr. T. F. Pearse, the health officer of Calcutta, in a paper of which he was the author, in its favour. It would appear, however, that other observers by no means agree with the views of Dr. Pearse: Captain D. Munro, I.M.S., and Captain T. H. Delany, I.M.S., reading papers at the Medical Section of the Asiatic Society of Bengal, gave no support to the above view. They demonstrated the constant appearance of anæmia of a marked degree with an increase in the proportion of leucocytes and also fever in all early and severe cases in epidemic dropsy, whilst these symptoms are said to be absent in beri-beri. Colonel Harris, I.M.S., also pointed out at the same meeting that in epidemic dropsy the knee-jerk was increased, whilst in all his cases of beri-beri there was absolute loss of the same from the first with one solitary exception where an increased knee-jerk was seen for one day only. He also drew attention to the before-mentioned absence of anæmia in beri-beri, and the very rare appearance of fever in the disease; and, lastly, whilst primary cardiac failure caused death in beri-beri, this was brought about by œdema of the lungs in epidemic dropsy. Captain M. McKelvie, I.M.S., furthermore drew attention to the presence of a rash in epidemic dropsy which was absent in beri-beri. On the other hand, Captain D. McCay, I.M.S., was inclined to think that beri-beri and epidemic dropsy were one disease. His experience of the state of the knee-jerks was such that he failed to differentiate the two diseases by any difference in this respect. Lastly, Dr. G. C. Chatterjee, who had had much experience of both beri-beri and epidemic dropsy at the Medical College Hospital, Calcutta, thinks that the two diseases are distinct. He also drew attention to the anæmia with low hæmoglobin value, which symptom was absent in beri-beri. In epidemic dropsy he had found the hæmoglobin as low as 20 per cent. and the red corpuscles only 1,200,000. He had never seen anæmia in beri-beri. The tenderness of the calves and loss of knee-jerk, so characteristic of beri-beri, were always absent in epidemic dropsy. Again, he points out that whereas in epidemic dropsy heart failure might occur, in beri-beri failure of the diaphragm was to be feared. There is thus seen to be considerable divergence of opinion from the views expressed by Dr. Pearse. The latter authority, however, in his reply to the discussion still maintained his opinion and repeated his argument that there was no one symptom by which these diseases could be absolutely distinguished. Although he made no attempt to controvert the statement of the above observers that anæmia and other blood changes were constant in epidemic dropsy but absent in beri-beri, yet there is a certain amount of truth in his observations; for instance, a case of beri-beri has been shown in which an increased knee-jerk has been present throughout the illness; and as regards the dread occurrence of heart failure in epidemic dropsy, this is the chief danger to be held in view in the case of beri-beri.

INFANT MORTALITY IN IRISH TOWNS.

THE deaths of infants under one year of age in Ireland during last year did not exceed 92 per 1000 registered births, showing a decline of 1 per 1000 from the rate in the preceding year; this rate compared very favourably with the rate of infant mortality in England and Wales, which during last year was equal to 118 per 1000. In the 22 town districts of Ireland the rate of infant mortality in 1907 was, however, equal to 135 per 1000, whereas in the 76 largest English towns the rate did not exceed 127, and in 142 smaller English towns the proportion was only 122 per 1000. This high rate of infant mortality in the urban population of Ireland affords evidence of the neglect of organised sanitation in Irish towns, which is corroborated by their general mortality statistics, to which attention was recently drawn in the special report on the health of Belfast. The low rate of infant mortality in the Irish rural districts shows, however, the general care of infant life by Irish mothers. It appears that among the entire Irish population, exclusive of the 22 town districts specially dealt with in the returns of the Registrar-General for Ireland, the rate of infant mortality during 1907 was so low as 72 per 1000.

VENEREAL DISEASES IN CHRISTIANIA IN THE YEAR 1907.

COMPULSORY notification of venereal diseases in Christiania has existed for many years and the annual report of Dr. Ustvedt, medical officer of health of Christiania, in the *Tidsskrift for den Norske Lægeforening* of Sept. 15th shows the marked fall in all forms of venereal disease except hereditary syphilis. Of the 1567 cases notified in 1907 gonorrhœa claimed 1015 (903 males, 112 females, including five under the age of 15 years); soft chancre, 143 (133 males, 10 females); acquired syphilis, 374 (251 males, one under 15 years, 123 females, two under 15 years); and hereditary syphilis, 35 (10 males, 25 females). In 1906 the number of new cases was 1889, while in the worst year, 1882, the number was 2533; in fact, 2·07 per cent. of the whole population, whereas the percentage for 1907 is only 0·68. Of the cases of acquired syphilis, extra-genital infection occurred in 20, two of which also had a primary sore on the genitals. The seat of infection in these cases was as follows: throat, one; tonsils, two; gums, one; lips, six; finger, one; a point ten centimetres above symphysis pubis, one; penis and point just below nipple, one; and penis and lower lip, one. In six cases the seat of the primary sore is not given. 14 women traced the infection to their husbands, and five men pleaded infection from their wives. In consequence of notification the medical officer of health and a lady medical practitioner examined 25 men and 64 women, one man and eight women having to be summoned by the police. One man refused to be examined; one man and three women refused to attend at the medical officer's quarters. Certificates from other medical men were obtained by 12 men and 12 women, of whom seven men and five women were declared diseased. 12 men and 25 women, including some children, were examined owing to their close association with infected cases; infection among these was detected in four women. Further, 314 men and 130 women have voluntarily presented

themselves for examination with a view to diagnosis and treatment. In placing patients under hospital treatment the assistance of the police was required in the case of five men and six women. On 44 occasions the aid of the police was requisitioned when the sources of infection were to be sought. In accordance with the law that punishes with imprisonment for not more than three years those who, conscious of or suspicious of venereal disease in themselves, infect or expose to infection others by cohabitation or improper intercourse, eight men and 13 women were prosecuted; of these two men and six women were convicted and sentenced. In acknowledgment of the fact that children suffering from hereditary syphilis are themselves a great source of infection, efforts have been made of late years to educate mothers and foster-mothers as to the true nature of the disease, and to prevent as far as possible such children being adopted by families with healthy offspring. This movement has been largely helped by a recent law which enacts that "he who conscious of or suspicious of infectious syphilitic disease in a child, employs a nurse for such a child, or puts it out to nurse, is liable to fine or imprisonment not exceeding six months." Owing to the difficulty experienced in finding suitable homes, these children have often to spend years in hospital, whereas in Sweden Professor Welander's nursing home provides for just such cases.

ENGLISH URBAN MORTALITY DURING THE PAST SUMMER.

THE annual rate of mortality during the three months ending with September in London and in the 75 other largest English towns dealt with in the Registrar-General's weekly returns, having an aggregate population of more than 16,000,000, did not exceed 13·4 per 1000, notwithstanding a marked increase during August. This rate exceeded the unprecedentedly low rate in the corresponding period of last year by 1·2 per 1000, but was 1·9 below the mean rate in the same towns in the third quarters of the four years 1904–07. The deaths registered in these 76 towns during last quarter exceeded the low number returned in the corresponding quarter of 1907 by 5311, of which excess 4601 were due to increase in the number of deaths resulting from diarrhœa. The exceptionally low death-rate during the summer quarter of 1907, more especially the low rate due to diarrhœa, was the result of the remarkably low temperature that prevailed during those three months. In the third quarter of last year only 510 deaths were referred to diarrhœa in London, equal to an annual rate of but 0·46 per 1000, whereas during the same period of this year the number rose to 1645, equal to a rate of 1·37 per 1000; in the corresponding quarters of the ten years 1897–1906, however, the mean annual rate from this disease was equal to 2·72 per 1000. The rate of mortality in the summer quarter is undoubtedly governed mainly by meteorological conditions, through the varying fatality of diarrhœa, almost entirely infantile. Infant mortality in the 76 large English towns during last quarter was equal to 146 per 1000 registered births, exceeding by 37 per 1000 the mean rate during the cool summer quarter of last year; it was, however, very considerably below the rate that prevailed in these towns in the corresponding quarters of 1905 and 1906, when it was 186 and 209 per 1000 respectively. In London the rate of infant mortality last quarter did not exceed 132 per 1000, while the mean rate during the quarter in the 75 provincial towns was equal to 151 per 1000. Infant mortality last quarter in London was 14·3 per cent. below the mean rate in the three preceding corresponding quarters, whereas in the 75 provincial towns the rate was not more than 12·7 per cent. below the same average. These figures imply more progress in checking the waste of infant life due to ignorant and neglectful treatment in London than in the aggregate of the 75 provincial towns. Due allowance being made for the meteorological conditions of the past summer, the mortality statistics relating to the largest English towns afford evidence, however, of generally improving sanitary conditions, both as regards infant mortality and the preventable fatality of summer diarrhœa.

VARICOSE EPIGASTRIC VEINS FOLLOWING PHLEBITIS.

IN the *Yale Medical Journal* for July Dr. J. E. Lane has reported a case in which phlebitis had an unusual sequel—varicose epigastric veins. An Italian shophand, aged 17 years, complained of a sore on the left leg and severe pain in both legs when standing or walking. Seven or eight years before he suffered from enteric fever and was confined to bed for six months. During most of the time both legs were swollen and painful. For about a month there was auditory and motor aphasia which disappeared gradually. In the past two years there had been at different times sores on the legs which healed under treatment. Examination showed on the front and outer surface of the right leg just above the ankle the scars of two varicose ulcers. On the inner surface of the left leg just above the ankle was a clean ulcer about an inch in diameter. The legs were œdematous up to the knees and the superficial veins of this region were much enlarged. On the left side of the trunk two dilated veins stood out prominently. One, the superficial thoracico-epigastric, started in the groin and ran up the trunk to the axilla connecting the femoral vein with the axillary. The other ran nearer the middle line from the groin to the lower end of the sternum. It began as the superficial epigastric and above the umbilicus anastomosed with the superficial median xiphoid vein which empties into the transverse anastomotic or pre-xiphoid. This last vein connects the two internal mammary veins. The two dilated veins on the trunk were tortuous, especially in their lowest part, and the current of blood in them was from below up. Palpation revealed nothing abnormal in the saphenous or femoral vein. Evidently the attack of enteric fever was complicated with extensive phlebitis, involving the veins of both legs. The thrombosis must have left an obstruction, partial or complete, in the femoral or external iliac vein, compelling the blood to take the circuitous route described. The history of the aphasia is of interest on account of the rarity of cerebral embolism or thrombosis in enteric fever.

THE Hunterian Society's first lecture of the new session will be delivered at the London Institution, Finsbury-circus, on Wednesday, Oct. 14th, at 8.30 P.M., by Dr. James Mackenzie on the Bearing of Hunter's Work on Recent Advances in the Study of Heart Affections. All members of the medical profession are invited.

His Majesty the King has been pleased to grant permission to Dr. T. Vincent Dickinson to accept and to wear the order of Chevalier of the Crown of Italy, conferred on him by the King of Italy in recognition of his services as physician to the Italian Hospital.

ROYAL SOCIETY OF MEDICINE.—The Odontological Section of the Royal Society of Medicine is prepared to receive applications for grants in aid of the furtherance of scientific research in connexion with dentistry. Particulars and forms of application will be supplied by the Honorary Secretary, Scientific Research Committee, Odontological Section, Royal Society of Medicine, 20, Hanover-square, W.

HOSPITAL AND MEDICAL SCHOOL DINNERS.

St. Bartholomew's Hospital.—The annual dinner of the old students of St. Bartholomew's Hospital was held in the Great Hall on Oct. 1st, under the presidency of Mr. H. Gilbert Barling, Dean of the Medical Faculty of the University of Birmingham. Among the guests were Inspector-General James Porter, C.B., Director-General of the Royal Navy Medical Service, and Sir Alfred Keogh, K.C.B., Director-General of the Army Medical Service; Dr. H. A. Miers, Principal of the University of London; the Rev. Dr. Gow, head-master of Westminster School; and about 150 old students, among whom were Mr. Howard Marsh, professor of surgery in the University of Cambridge, and Dr. George Wilks, Master of the Society of Apothecaries. After the usual loyal toasts that of "The Imperial Forces" was proposed by Dr. W. P. Herringham and responded to respectively by Inspector-General Porter and Sir Alfred Keogh. The toast of "The Visitors" was proposed by Dr. Norman Moore in an eminently characteristic speech full of sound learning and wit and responded to by Dr. Miers and the Rev. Dr. Gow. One notable feature of the evening was the way in which the idea of compulsory military training was advocated by many speakers and received with loud applause. The speeches were all good and commendably brief and after dinner an adjournment was made to the magnificent new pathological block which has just been opened.

St. George's Hospital.—The opening of the autumn session at St. George's Hospital was marked this year by the inauguration of the new St. George's Hospital Club. A large number of past and present students crowded the lecture theatre, where Sir William H. Bennett was in the chair and gave the new club a send-off that promises well for its future success. In the evening the annual dinner was held under the chairmanship of Dr. T. T. Whipham, consulting physician to the hospital, and a record number of St. George's men enjoyed themselves in the manner traditional to the first of October.

London Hospital.—The annual dinner was held at the Savoy Hotel on Oct. 1st. The chair was occupied by Dr. A. J. Rice Oxley, and amongst the 180 old students and others who sat down to dinner were Sir Frederick Treves, Bart., G.C.V.O., C.B., Sir R. W. Burnet, Sir Cecil Trevor, C.B., Mr. Jonathan Hutchinson, and Colonel W. F. Cavaye. After the loyal toasts had been duly honoured Dr. Rice Oxley, in proposing the toast of the evening, "The London Hospital," spoke with pride of the progress which the institution had made since he had first entered it as a student 30 years ago. Progress was the watchword of the house committee and it had lately appointed some lady almoners to the out-patient department, whose duties would be to prevent hospital abuse and to keep the hospital in touch with the activities of various external charities. The entries to the medical school were keeping up even whilst those of the majority of other metropolitan schools showed a decline in numbers. Finally, he recommended all with rich patients to interest them in the Medical College Endowment Fund. In replying, Mr. Douro Hoare, chairman of the college board, alluded to the sad loss of Mr. Harold Barnard and dwelt upon his heroism in working up to a couple of months before the end without a murmur, although himself suffering and knowing the nature of his disease. After referring to the early days of the hospital Mr. Hoare said that the ambitions that actuated those early governors still animated those of the present day—viz., to succour the sick poor of Whitechapel, to advance medical and surgical knowledge and research, and to train the best students. For the present work of the hospital Mr. Morris, the secretary, should be consulted. The toast of "The Chairman" was proposed by Dr. A. Mantle and suitably acknowledged, and after Mr. Jonathan Hutchinson had responded to a universal request for a speech by thanking the old students for so honouring him and expressing the pleasure and interest which these dinners gave him year by year the meeting broke up.

St. Mary's Hospital.—The annual dinner of St. Mary's Hospital medical school was held in the Whitehall Rooms on Oct. 2nd, Dr. A. P. Luff being in the chair. Amongst those present were Surgeon-General Sir Alfred H. Keogh, Inspector-General James Porter, Sir Anderson Critchett, Sir Malcolm A. Morris, Mr. H. A. Harben, Mr. G. A. Byron, with many members of the staff and past and present students of the hospital. The dinner was successful in every way and was aptly described by one of the speakers as "a family gathering." The toast list was, by the chairman's benign ruling, commendably short, comprising only "The King" and "St. Mary's Hospital and Medical School," given by the chairman and responded to by Mr. Harben, chairman of the hospital board, and Mr. W. H. Clayton-Greene, dean of the medical school; and "The Visitors" proposed by Dr. W. J. Gow and responded to by Sir Alfred Keogh. Dr. Luff, in his speech, paid a distinguished tribute to Mr. Harben's untiring work for the hospital and especially to his success in coördinating the aims of the medical and lay elements of the board of management; he also referred to the remarkable success of the Hospital Rifle Club in winning the four trophies which decorated the high table. The dean, in replying, gave a list of conspicuous academical honours won by the school during the last year and spoke of the neglected responsibility of the State in the medical education of the country. Sir Alfred Keogh, in replying for the visitors, said that he was not a stranger to St. Mary's, for he had chosen that hospital for a course of post-graduate study after his return from service abroad, as he considered it to be the most progressive hospital in London. During the evening Mr. Byrd-Page gave an amazing performance called "My Hands and Your Eyes," which added considerably to the gaiety of the gathering.

St. Thomas's Hospital.—The annual "Old Students" dinner took place on Oct. 2nd at the Savoy Hotel, Mr. Thomas Wakley being in the chair, supported by a large company, including Mr. J. G. Wainwright, J.P. (treasurer of the hospital), Dr. J. F. Payne, Dr. S. J. Sharkey, Mr. H. H. Clutton, Dr. H. P. Hawkins, Mr. G. H. Makins, Dr. Hector Mackenzie, Mr. Bernard Pitts, Mr. W. H. Battle, Mr. H. Betham Robinson, Dr. W. W. H. Tate, Lieutenant-Colonel J. Lees Hall, R.A.M.C., Mr. D. K. Macdowell, C.M.G., Lieutenant-Colonel H. E. R. James, R.A.M.C., Dr. L. W. Sedgwick, Dr. J. F. Priestley, Mr. F. G. Hallett, Mr. Cuthbert S. Wallace (dean of the medical school), Mr. G. Q. Roberts, and Mr. J. E. Adams and Dr. M. A. Cassidy (secretaries of the dinner committee). After the loyal toasts had been duly honoured the chairman, in proposing the toast of "St. Thomas's Hospital and Medical School," pointed out that since the year 1875, when he entered as a student at St. Thomas's Hospital, the discoveries and advances in connexion with medicine and surgery had been of such a remarkable nature as practically to transform both the hospital and the medical school. In those days antiseptic surgery was in its youth. With regard to the days that had since elapsed he was reminded of the well-known line "Felix qui potuit rerum cognoscere causas." In that comparatively brief space of time it had been the happy lot of the profession to learn the causes of many of the diseases which afflict mankind, to obtain knowledge of, for instance, the pathogenic agents of tuberculosis, of diphtheria, of tetanus, and of syphilis, and of the mode of the spread of malaria, yellow fever, sleeping sickness, Malta fever, and other devastating tropical diseases. Then, again, the introduction of serum therapeutics and vaccines, the discovery of the Roentgen rays and of radium, and the work of Finsen and others with regard to the therapeutics of light had resulted in new and often very technical methods of treatment. He had no hesitation in saying that in the journey along the paths of scientific progress St. Thomas's Hospital and its medical school could challenge comparison with any of the great medical institutions. The toast was responded to by the treasurer, Mr. Wainwright, and the dean, Mr. Wallace. The former alluded to the many years that had elapsed since he first assumed the duties of his office and the many improvements that had been effected during that period. He concluded with a sympathetic reference to the loss which they had sustained by the death of Dr. Cullingworth. The dean (Mr. Wallace) urged the long-felt necessity in London for "an average degree for an average man," the granting of which he hoped would no longer be opposed by existing graduates, and mentioned the fact that a lying-in ward would in all probability soon form part of the hospital. The toast of "The Chairman" was proposed in humorous terms by Dr. W. J. Sheppard and suitably acknowledged.

University College Hospital.—The annual dinner of the old and present students of this school was held in the library of the Medical School on Oct. 2nd, under the chairmanship of Professor A. H. Carter. The company numbered 122. There were only two toasts after that of "The King." The chairman proposed "University College Hospital Medical School," to which the Dean, Dr. H. Batty Shaw, replied. In his speech Professor Carter traced the history of the school and compared the old buildings with the commodious new medical school; he also spoke in terms of veneration of Sir William Jenner and others of his old teachers. The remaining toast was "The Chairman," which was given by Dr. H. Radcliffe Crocker.

Westminster Hospital.—The winter session was inaugurated by a dinner of past and present students held at the Wharncliffe Rooms, Hotel Great Central, on Oct. 2nd. The chair was taken by Dr. N. W. Bourns, senior anæsthetist to the hospital, who presided over a full attendance. When the loyal toasts had been honoured the chairman proposed "The Westminster Hospital and Medical School." He referred to the honour done to the school as well as to the recipient in the knighthood conferred by the King upon Dr. W. Allchin, a fitting recognition of his services to medicine, to medical education, and to the institution of which he had been so brilliant and tireless a servant. He then alluded to the grievous loss sustained by school and hospital alike by the deaths of Mr. E. P. Paton and Dr. Bertram L. Abrahams, who held the offices of dean and sub-dean respectively. Cut off in the prime of life, in the early flush of successful practice, they left a blank in the ranks, and he might say in the hearts of their colleagues that not even time could fill. Dr. F. de Havilland Hall, who responded, spoke of the benefits accruing from the centralisation of preliminary science teaching. Originally advocated by Sir William Allchin 20 years ago, it had become an accomplished fact so far as Westminster was concerned and the arrangement with King's College was working well. The toast of "The Students, Past and Present," was proposed by Mr. A. H. Tubby who dilated upon the happy relations always existing at Westminster between the staff and the students. Mr. G. L. Parsons, replying for the "Past," spoke at some length on the general practitioner's reflections upon medical education, of the uselessness of set lectures, and the immense value of bedside instruction and demonstration. Some teachers overlooked the fact that tables of data were best acquired from text-books, whilst clinical experience could only be handed on over the beds of actual patients. Mr. G. R. Ward, for the "Present," made a happy little speech appreciating the efforts of the staff to impart not only the facts but also the ethics and spirit of medicine, and the sympathy which they showed for other interests of the students. Mr. Charles Ryall proposed the health of the chairman, and Sir William Allchin that of the secretary, Mr. Carling.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

The City of Manchester.—In dealing with Manchester we are concerned with a population little short of 650,000 living in the midst of other aggregations of population which together with that of Manchester mount up to a very large figure. It does not in all approximate to that of the metropolis, but one day, when the rural lacunæ become filled up, it may do so, and perhaps our children's children may see a Manchester which has on numerous occasions extended its municipal limits, and towns which are now separate have become boroughs of the county of Manchester. There is not so much imagination in this picture as some people may think. Dr. James Niven, who deals with the local statistics in considerable detail, expresses the opinion when discussing the decreasing birth-rate that such diminution is due not merely to the prevention of conception but also in no small measure to the destruction of its fruits. He thinks, too, that the offspring must sometimes be injured by efforts to induce premature labour. Although the death-rate of Manchester is steadily declining, the relative position of the city in the firmament of the 76 great towns remains unaltered; it is still eighth from the bottom. Dr. Niven furnishes a table showing that although there was less pauperism in 1907 than in the previous three years the proportion of deaths occurring in public institutions to total deaths did not diminish. They were 26·5 of the total deaths, the highest proportion yet attained, and Dr. Niven thinks that this increasing tendency for the sick to obtain admission must have a material effect upon the death-rate, presumably diminishing it through careful nursing and the like. The death-rate for pulmonary tuberculosis in 1907, as compared with that in 1906, was stationary, but there was a pause in the ascent of the figures relating to malignant disease. The deaths from diarrhœa, which were 981 in 1906, fell to 291 in 1907, a fact for which the cool summer was no doubt largely responsible. With reference to the natural increase of the population of Manchester it is significant that the artisan and the Jewish populations of Manchester are increasing most rapidly. The increase is greatest in the Cheetham district, which means that the Jewish community is increasing at a greater rate than any other part of the population. Dr. Niven discusses certain aspects of scarlet fever in interesting fashion and he supplies figures showing that the disease is more infectious at its commencement than later, since the majority of cases occur within eight days after the first attack. The disease has, he concludes, a comparatively low degree of infectivity as compared with measles and whooping-cough, and, in his opinion, the modern view that the cutaneous eruption is toxic and non-specific is open to question; he thinks that it is safer to take early precautions to prevent the discharge of infection from the skin. In his view, we know nothing definite of the bacteriology of scarlet fever. Dr. Niven has been reflecting as to the causes which promote the annual rise of this disease. There is, he says, certainly a progressive though not a steady change of type going on. Part of this change of type may, he surmises, be due to notification, but he is more inclined to attribute it to the progressive diminution in filth near dwellings. In the matter of "return" cases of scarlet fever he expresses the opinion that there is no proof that prolonged detention in hospital diminishes the incidence of such cases. We cannot discuss the matter further here, but we may briefly quote Dr. Niven. It would, he thinks, "be a source of great satisfaction if it were possible to dispense with removal to hospital of cases of scarlet fever. There can, however, be little doubt that if this were done we should have a considerable increase of the disease, especially in poor and crowded households, the more so that in many instances the cases would be concealed. There is also little doubt that the type of the disease would be rendered more severe. It does not seem possible to contemplate such action. On the other hand, it is for the same reason not desirable to urge the removal of cases to hospital when isolation is being carried out at home in a suitable manner." Dr. Niven goes thoroughly into the behaviour of diphtheria in Manchester at the pre-school, school, and post-school age groups, and he concludes that aggregation in elementary schools plays a distinct though moderate part in the propagation of this disease. The incidence of the disease on the Manchester township has been within recent years materially less than in other parts of the city, and it is difficult to explain why the schools in the township should have escaped. The medical officer of health suggests that such relative immunity may be due to a process of immunisation from the spread of a bacillus of a comparatively low virulence which is able without causing disease to manufacture sufficient antitoxin to repel infection. There has been a gratifying decrease in the death-rate from enteric fever in Manchester during the last 20 years, the rate from 1901–05 having been 0·13 per 1000. The greatest incidence of the disease is in the fourth quarter of the year. As a general rule, and from a study of individual cases which was made in 1905, the conclusion was come to that a very large number of cases—no fewer than the number notified—are altogether overlooked. There can, we think, be little doubt that this is generally the case and that the remark has also application to certain other diseases. Dr. Niven does not regard it as probable that any material part of the autumnal rise is due to infected water or milk, and apparently, notwithstanding the investigations of Sidney Martin, of Horrocks, Firth, and others, he regards it as doubtful whether the enteric fever bacillus multiplies in the soil; he thinks it unlikely that the desiccation of excrement-polluted soil would suffice to

account for the rise. He seems to think, however, that the bacillus of enteric fever can retain its virulence for long periods in the walls of privy middens, and he regards evidence that he adduces as suggesting that the middens begin in July to exercise a special influence on the propagation of enteric fever which increases in August and culminates in September. He then proceeds to ask how far a theory that the house-fly is the agent of transmission of the bacillus is supported by facts. He finds that in Manchester the number of cases of enteric fever begins to ascend four to five weeks after a considerable increase in flies and two weeks after a marked increase of deaths from diarrhœa. But after further detailed consideration he expresses a doubt as to how far flies do actually act as a source of infection and he proceeds to discuss the food factor. Watercress he dismisses as improbable and his mental attitude with regard to lettuces, celery, and fruits is a similar one. The influence of shell-fish, especially mussels, is discussed in considerable detail, but Dr. Niven finally comes to the conclusion that the contribution from shell-fish is essentially secondary. To the summer and autumn holiday period some influence is, he concludes, ascribable, but the factors are so complicated that it is difficult to measure the influence. Dr. Niven does not regard the previous prevalence of diarrhœa as bearing much relation to the subsequent enteric fever, and he is unable to add any facts as regards the interesting question of seasonal predisposition—i.e., whether the climatic effects of season predispose the body to attack in autumn—but he evidently suspects that the high degree of infectivity which attaches to cases of enteric fever in autumn and winter may be an important factor in bringing about the seasonal rise in the disease. Dr. Niven sets out his purely provisional conclusions seriatim but they would occupy too much space to reproduce. His recommendations embody the abolition of pail closets and middens, effectual house drainage, protection of foods, manure, and refuse from flies, the substitution of refuse tips by destructors, the registration of sellers of shell-fish, and the discovery of overlooked cases of the disease. Perhaps the last factor ought to be placed first. Dr. Niven's report abounds with discussions of epidemiological interest, but as the volume runs to over 300 pages the report itself must be consulted. The Manchester Milk Clauses were vigorously applied during 1907 and 700 samples of mixed milk were examined for tuberculosis. These milks came from Cheshire, Derbyshire, Staffordshire, Lancashire, Shropshire, and Yorkshire, the number of farms which sent tuberculous milk into Manchester ranging from *nil* to 12·5 per cent. The tuberculous mixed samples were followed up and 28 cows were found to be suffering from tuberculosis of the udder. Of these cows 21 were slaughtered in the presence of the veterinary surgeon and in five cases the whole carcass was passed as fit for food, in two cases parts of the carcass were passed, and in the remaining 14 the whole carcass was condemned.

The City of Edinburgh.—The population of the Scottish capital for 1907 was estimated at 345,967. The birth-rate was only 21·6, a rate markedly below nearly all the large towns of England and Scotland during the same year. In 1890 the birth-rate of the city began to fall and since then it has steadily declined. Sir Henry D. Littlejohn does not discuss the matter in relation to age, sex, and class distribution. As regards the death-rate, it was heaviest in the first quarter and lightest in the third, the rate for 1907—14·4 per 1000—comparing favourably with the other large towns in England and Scotland. Aberdeen and Bristol both had lower rates. The popularity of the fever hospital appears to be on the increase judging from the percentage of the total number of notified cases of scarlet fever, enteric fever, and diphtheria which obtained admission. The increase has been most marked in the case of diphtheria, the percentage of admission being double that which obtained nine years ago. There was, too, in 1907 a marked difference in the fatality rate of those cases treated inside and those treated outside the hospital, the former rate being 4 per cent., the latter 12 per cent. Dr. Claude B. Ker in his report for the city fever hospital furnishes some interesting data. The number of cases admitted for diphtheria was 546, but subsequent experience seems to have shown that 67 were cases of tonsillitis. In many of these cases the diphtheria bacillus had, it was stated, been found prior to admission, but none could be found subsequently and the clinical appearance of the cases did not justify the diagnosis of diphtheria. Of the other cases, seven were cases of scarlet fever and two secondary syphilis. As regards enteric fever, of the 91 cases sent in as enteric fever only 69 were found to have the disease. The experience of 1907 in the matter of cerebro-spinal fever is instructive. Of 122 cases notified as suffering from that disease 112 were found to be so suffering and of these 88 died, the fatality rate being 78·57 per cent. Of the patients 43 per cent. were under five years of age and 81 per cent. under 20 years of age. 22 of the patients died within 24 hours of admission. Post-mortem examinations were made on 34 of the patients and even after two or three days it was common to find the brain and spinal cord thickly plastered with purulent matter. The relief afforded by drawing off the purulent fluid from the spinal cord was only temporary and drugs were but of little avail. Hot baths were found to be most efficacious in assuaging pain and the children were found to be crying for their baths, which were given three times daily. None of the serum employed gave very satisfactory results except that of Dr. Simon Flexner of New York, which was moderately successful. Dr. Ker discusses the question of the so-called cross-infections in fever hospitals. In his view such cases are not due, as is sometimes believed, to the carriage of infection from one ward to another by attendants, an event which in his experience is extremely rare. He attributes the phenomenon to the introduction of patients with two diseases running concurrently or by the introduction of cases wrongly diagnosed. Or again, a patient introduced with one disease may be incubating another. Dr. Ker gives illustrations of all these methods and he furnishes a rather formidable list of persons who admitted for one disease contracted another. There are some wards in the hospital for pulmonary tuberculosis and during 1907 130 cases were admitted to them, the cases being mainly those of an advanced type. We cannot close this brief notice of Sir Henry Littlejohn's last report without an expression of deep regret at his retirement from the position which he has held for so many years and of our appreciation of the eminent services which he has rendered to preventive medicine.

County Borough of Blackpool.—Dr. F. J. H. Coutts, in the course of observations on the question of infantile mortality, states that it is astonishing to find the trivial reasons which are sometimes advanced to induce mothers to discontinue suckling and he adds that some monthly nurses and midwives are too ready to assume that the mothers' milk is insufficient and that it is necessary to use some patent food which has been sent to the midwife by an advertising firm. The female inspector who has recently been appointed is, Dr. Coutts observes, frequently encountering the problem of the unwanted, illegitimate child. In one case it was ascertained that the child had been in nine different homes during its life of ten months, while another, three months old, had been in three different homes. The experience of Dr. Coutts is to the effect that supervision over homes where one child is kept is as necessary as over homes where several children are taken.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8396 births and 4139 deaths were registered during the week ending Oct. 3rd. The annual rate of mortality in these towns, which had steadily declined in the six preceding weeks from 15·8 to 13·2 per 1000, was equal to 13·3 in the week under notice. During the 13 weeks of last quarter the annual death-rate in these towns averaged 13·4 per 1000, and in London the mean rate in the same period did not exceed 12·5. The lowest annual death-rates in these towns during the week under notice were 5·6 in Hornsey, 6·1 in Smethwick, 6·6 in Willesden, and 6·7 in West Hartlepool; the rates in the other towns ranged upwards, however, to 18·6 in Preston, 18·9 in Tynemouth, 19·6 in Salford, 21·3 in Rotherham, and 21·4 in Bolton. In London the death-rate during the week did not exceed 12·2 per 1000. The 4139 deaths from all causes in the 76 towns showed an increase of 24 upon the number in the previous week, and included 521 which were referred to the principal epidemic diseases, against numbers declining from 1343 to 527 in the five preceding weeks; of these 521 deaths, 363 resulted

from diarrhœa, 38 from whooping-cough, 34 from measles, 34 from diphtheria, 29 from scarlet fever, and 23 from "fever" (principally enteric), but not one from small-pox. The deaths referred to these epidemic diseases during the week were equal to an annual rate of 1·7 per 1000, corresponding with the rate that prevailed in the previous week; in London the death-rate from these diseases last week did not exceed 1·3. No death from any of these epidemic diseases was registered last week in Brighton, Plymouth, Wallasey, Northampton, King's Norton, West Hartlepool, or in Smethwick; whereas the annual death-rates therefrom ranged upwards in the other large towns to 3·7 in West Bromwich, 4·3 in Rhondda, 4·4 in Warrington, and 7·4 in Rotherham. The deaths attributed to diarrhœa in the 76 towns, which had steadily declined in the six preceding weeks from 1134 to 353, rose again under the influence of the remarkable increase of temperature to 363 in the week under notice, instead of showing a further decline; the highest annual death-rates from this cause last week were 3·0 in West Bromwich, 3·5 in Rhondda, 3·6 in Grimsby, and 4·9 in Rotherham. The 38 fatal cases of whooping-cough showed a decline of four from the number in the previous week; this disease caused the highest death-rates, 1·4 in Merthyr Tydfil and 1·6 in Walsall. The 34 deaths from measles showed, however, an increase of three, but caused death-rates equal to 1·5 both in Bootle and in Warrington. The fatal cases of diphtheria, which had been 43 and 39 in the two preceding weeks, further declined last week to 34, but included 15 in London and its suburban districts, and two each in Birmingham, Liverpool, Manchester, Hull, and Cardiff. The 29 deaths from scarlet fever exceeded by two the number in the previous week, including 14 in London and its suburban districts, eight in Liverpool and Bootle, and two in Manchester and Salford. Of the 23 deaths from "fever," showing a decline of 12 from the number in the previous week, nine occurred in London, and three both in Liverpool and in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily increased from 2855 to 3467 in the four preceding weeks, had further risen to 3643 on Saturday, Oct. 3rd; the number of new cases of this disease admitted to these hospitals during the week under notice were 576, against 472, 625, and 565 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had steadily increased in the four preceding weeks from 102 to 138, further rose to 159 in the week under notice, but were six below the corrected average number in the corresponding week of the five years 1903–07. The causes of 18, only 0·4 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were again duly certified in London, Manchester, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, and in 53 other smaller towns during the week under notice; the 18 uncertified causes of death included two in Liverpool and two in South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 14·4 and 13·5 per 1000 in the two preceding weeks, further declined to 13·4 in the week ending Oct. 3rd. During the 13 weeks of last quarter the annual death-rate in these eight towns averaged 13·8 per 1000 and exceeded by 0·4 the mean rate during the same period in the 76 English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 3·0 and 9·8 in Perth and Paisley to 14·9 in Dundee and 15·2 in Edinburgh. The 474 deaths in the eight towns showed a further decline of one from the numbers returned in the two preceding weeks, and included 63 which were referred to the principal epidemic diseases, against numbers declining from 107 to 59 in the six preceding weeks; of these 63 deaths, 30 resulted from diarrhœa, 16 from whooping-cough, six from diphtheria, five from "fever," four from scarlet fever, and two from measles, but not one from small-pox. These 63 deaths were equal to an annual rate of 1·8 per 1000, exceeding by 0·1 the mean rate from the same diseases in the 76 large English towns. The deaths attributed to diarrhœa in the eight Scotch towns, which had declined in the four preceding weeks from 64 to 35, further declined to 30 in the week under notice; 13 of these occurred in Glasgow, seven in Dundee, and three both in Edinburgh and in Leith. The fatal cases of whooping-cough, which had fallen in the four previous weeks from 19 to nine, rose again last week to 16, including 11 in Glasgow, three in Aberdeen, and two in Edinburgh. The six deaths from diphtheria were fewer by two than the number in the previous week; three occurred in Paisley and two in Gasgow. All the five deaths referred to "fever" were returned in Glasgow, three being certified as cerebro-spinal meningitis and two as enteric. The fatal cases both of scarlet fever and of measles showed a slight increase; the four of scarlet fever included two in Edinburgh and two in Dundee. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 73 and 59 in the two previous weeks, rose again to 61 in the week under notice, but were four below the number returned in these towns in the corresponding week of last year. The causes of 19, or 4·0 per cent., of the deaths registered during the week in the eight towns were not certified or not stated; in the 76 English towns during the same week the proportion of uncertified causes of death did not exceed 0·4 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 19·3 and 20·8 per 1000 in the two preceding weeks, declined again to 18·0 in the week ending Oct. 3rd. During the 13 weeks of last quarter the death-rate in Dublin averaged 19·9 per 1000; the mean rate during the same period did not exceed 12·5 in London and 12·9 in Edinburgh. The 136 deaths of Dublin residents during the week under notice showed a decline of 21 from the number returned in the previous week, and included 17 which were referred to the principal epidemic diseases, against numbers declining from 44 to 18 in the six preceding weeks. These 17 deaths were equal to an annual rate of 2·2 per 1000; the rate during the same week from these diseases did not exceed 1·3 in London and 1·2 in Edinburgh. Of the 17 deaths from these epidemic diseases in Dublin during last week, eight resulted from diarrhœa, four from "fever," four from measles, and one from scarlet fever, but not one from diphtheria, whooping-cough, or small-pox. The deaths attributed to diarrhœa, which had declined in the six preceding weeks from 39 to 12, further fell to eight last week. The four deaths referred to "fever" exceeded the numbers in recent weeks. The four fatal cases of measles corresponded with the number in the previous week; and the death from scarlet fever was the first registered since the beginning of August. The 136 deaths from all causes during the week included 25 of infants under one year of age and 38 of persons aged upwards of 60 years; the deaths of infants showed a marked decline from the numbers in recent weeks. Three inquest cases and two deaths from violence were registered; and 53, or 39·0 per cent., of the deaths occurred in public institutions. The causes of three, or 2·2 per cent., of the deaths registered in Dublin during the week were not certified; in London the causes of all the 1125 deaths were duly certified, while in Edinburgh the proportion of uncertified causes of death was 2·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881: Fleet-Surgeon Reginald Thomas Alexander Levinge has been placed on the retired list at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated Oct. 3rd, 1908).

The following appointments are notified:—Fleet-Surgeons: T. Austen to the *Britannia* and J. Menary to the *Vengeance*, both on recommissioning. Surgeons: J. H. McDowall to the *Britannia*, on recommissioning; W. N. Horsfall to the *Pembroke;* and M. W. Haydon to the *Essex*.

ROYAL ARMY MEDICAL COLLEGE.

Lieutenant-Colonel Charles H. Melville, R.A.M.C., to be

a Professor, vice Lieutenant-Colonel A. M. Davies, retired (dated Sept. 17th, 1908).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel William B. Day is placed on temporary half-pay on account of ill-health (dated Sept. 30th, 1908).

Captain E. T. Inkson, V.C., from London, is appointed for duty in India.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major Joseph Adams to be Surgeon-Lieutenant-Colonel (dated Sept. 22nd, 1908).

TERRITORIAL FORCE.

Yeomanry.

Buckinghamshire (Royal Bucks Hussars): The undermentioned officers from the Buckinghamshire (Royal Bucks Hussars) Imperial Yeomanry are appointed to the regiment with rank and precedence as in the Imperial Yeomanry (dated April 1st, 1908): Surgeon-Captain Leonard Arthur Barwell and Surgeon-Captain Francis Ernest Marston. Queen's Own Oxfordshire Hussars: Surgeon-Lieutenant Archibald Henry Hogarth, from the Oxfordshire (Queen's Own Oxfordshire Hussars) Imperial Yeomanry, to be Surgeon-Lieutenant, with precedence as in the Imperial Yeomanry (dated April 1st, 1908).

Royal Field Artillery.

2nd South Midland Brigade: The undermentioned officers from the 1st Worcestershire Royal Garrison Artillery (Volunteers) are appointed to the brigade, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Captain Arthur Charles Oldham, Surgeon-Captain George Herbert Rutter, and Surgeon-Lieutenant George Mackie (to be supernumerary).

Royal Garrison Artillery.

Devonshire: The undermentioned officers, from the 2nd Devonshire Royal Garrison Artillery (Volunteers), are appointed to the unit, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Captain James Philip Stephens Ward and Surgeon-Lieutenant George Douglas Kettlewell.

Infantry.

4th Battalion, Cheshire Regiment: The undermentioned officers, from the 1st Volunteer Battalion, The Cheshire Regiment, are appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908):—Surgeon-Captain Conrad Theodore Green, Surgeon-Captain John Brown Yeoman, and Surgeon-Captain Andrew Robertson Wilson (to be supernumerary). The undermentioned officers from the 3rd Glamorgan Volunteer Rifle Corps, are appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Major Arthur Lloyd Jones, Surgeon-Captain George Arbour Stephens, and Surgeon-Lieutenant Charles Leonard Isaac (to be supernumerary). 7th (Fife) Battalion, The Black Watch: The undermentioned officer, from the 6th (Fifeshire) Volunteer Battalion, The Black Watch (Royal Highlanders) is appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Lieutenant David Elliot Dickson. 5th Battalion, Loyal North Lancashire Regiment: The undermentioned officer, from the 2nd Volunteer Battalion, The Loyal North Lancashire Regiment, is appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Captain James Wood. The Herefordshire Battalion, The King's (Shropshire Light Infantry): The undermentioned officers from the 1st Herefordshire Volunteer Rifle Corps, are appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Captain James Neil Macmullan and Surgeon-Lieutenant Arthur Llewellyn Baldwin Green. 6th (Banff and Donside) Battalion, Gordon Highlanders: Surgeon-Lieutenant Ellington Reed Turner from the 4th (Donside Highland) Volunteer Battalion, The Gordon Highlanders, is appointed Surgeon-Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). 5th (Renfrewshire) Battalion, Argyll and Sutherland Highlanders: Surgeon-Captain Claude William Marshall, from the 1st (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908). 6th (Renfrewshire) Battalion, Argyll and Sutherland Highlanders: Surgeon-Captain Wallace Ainsforth Pride, from the 3rd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908). 7th Battalion, Argyll and Sutherland Highlanders: Surgeon-Lieutenant Peter McFadyen, from the 4th (Stirlingshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). 9th (The Dumbartonshire) Battalion, Argyll and Sutherland Highlanders: Surgeon-Captain William Buchan Armstrong, from the 1st Dumbartonshire Volunteer Rifle Corps, to be Surgeon-Captain, with precedence as in the Volunteer Force (dated April 1st, 1908).

Correspondence.

"Audi alteram partem."

THE PREVENTION OF TUBERCULOSIS (IRELAND) BILL.

To the Editor of THE LANCET.

SIR,—It is satisfactory to find that Dr. J. C. McWalter's opposition to the Prevention of Tuberculosis (Ireland) Bill is lessening, for in his letter in your issue of Oct. 3rd, p. 1035, he says: "Everyone could see that compulsory notification may be an excellent thing in a city where a whole population works together in crowded factories and a doubtful experiment for a whole country where the conditions are absolutely different." Now, if Dr. McWalter had shown that phthisis occurred only in such cities and not in other places there would be some weight in his opinion. For instance, Belfast is, practically speaking, the only big city in Ireland where a large number of the population work in large factories, and on Dr. McWalter's reasoning compulsory notification should apply to that city alone in Ireland; but unfortunately in both Cork and in Dublin the death-rate from phthisis is higher than in Belfast; and, further, in every other city in Ireland—nay, more, in every district in Ireland—this fell scourge has its victims. During 1907 of the 8828 deaths from phthisis (tuberculous phthisis and phthisis not otherwise defined) 2596 occurred in Leinster, 2178 in Munster, 3100 in Ulster, and 954 in Connaught—that is, in every part of Ireland, urban and rural. Now of these, 1054 occurred in Belfast; yet that city alone with only 1054 deaths is to be under compulsory notification (according to Dr. McWalter's plan), while the whole of the rest of Ireland with 7774 deaths is not. Such a line of reasoning carries its own reply. Dr. McWalter says the example of an odd city goes for nothing, he wants me to point out an entire country where compulsory notification prevails and causes no hardship. The cities I enumerated were Sheffield, Bolton, Edinburgh, and New York, and their united population is 3,335,314—that is, only about 1,000,000 less than the population of the whole of Ireland. In each of these cities the phthisis death-rate had steadily fallen before they adopted compulsory notification, but not content they are determined it shall fall still more, and yet, sad to say, during all this period the death-rate from tuberculosis has risen in Ireland. If the compulsory notification of the disease is adopted it must apply to every part of Ireland (urban or rural) until the disease is stamped out.

As to a country where notification is adopted: 1. Let me give, if not a country, what is practically the same, a great state of a country. New York State is larger than England, it has a population little less than twice that of Ireland—viz., about 8,000,000—and in it the notification of even incipient cases of tuberculosis is rendered obligatory; the same is true of New Jersey and the District of Columbia. Compulsory notification will soon exist in the whole of the United States. 2. On Sept. 28th, 1908, at the International Congress on Tuberculosis in Washington, Dr. A. Newsholme stated, on behalf of Mr. Burns, that the Local Government Board had decided to issue an order compelling all Poor-law medical officers to notify forthwith the medical officers of health of any sanitary authorities making application for such notification, all cases of phthisis occurring amongst parochial patients. This order would also render it obligatory on other Poor-law officials to

notify changes of address of parochial patients suffering from phthisis. Does this not portend the extension of notification soon to the whole of England? 3. In Scotland in 1906—that is, in a country where the mortality from pulmonary tuberculosis has gone down 40 per cent., while in Ireland it has risen during the same period 20 per cent.—the Local Government Board issued a circular to the effect that the sections of the Public Health Act applicable to other infectious diseases are equally applicable to pulmonary phthisis and that the obligation resting on the local authority to deal with and control infectious disease extends to pulmonary phthisis. It is believed that Scotland will soon go for an Act making notification of phthisis (pulmonary tuberculosis) compulsory all over the country. With such examples, why can Ireland not be allowed (as through the genius and foresight of Her Excellency the Countess of Aberdeen she has taken a step in time in advance of these countries) to have notification of pulmonary tuberculosis applied to every part—urban or rural district?

Finally, Dr. McWalter says: "The fact that in 1864 the Irish death-rate from tuberculosis was the lowest in the three kingdoms, although no sanitary precautions were heard of, whereas now, after a quarter of a century's sanitary legislation, it is the highest, gives one to think furiously about the net result of these measures in actual practice." He should have also added that during the same period the English and Scotch rates have steadily fallen until now the death-rate from tuberculosis in England is 1·6 (1906), in Scotland 2·1 (1906), and in Ireland 2·7 (in both 1906 and 1907), and further that in all three countries typhus fever has declined, until in Ireland in 1907 there were only 56 deaths, while in 1869 there were 891 from this fever. Why, Sir, it is these very facts which are the cause of the agitation in Ireland which has culminated in Mr. Birrell's Bill.

1. We have not made the same progress in Ireland as in England or in Scotland in the sanitary measures taken to improve the dwellings of the people all over the country. 2. As pointed out in the report of the Belfast Health Commission in reference to the Births and Deaths Registration Act, "The absence of this (one of the provisions in the English and Scotch Bills) provision in Ireland has had the effect that no local authority appears to have the power of obtaining information which is of fundamental importance to them in their primary duty of searching for and coping with causes of ill-health and death among the population committed to their charge." As a result more is known in England and Scotland by the health authorities than in Ireland as to where the disease exists. 3. The difference between Ireland as compared with England and Scotland is that in the former far more patients are relieved medically at their homes under the Poor-law system which favours the treatment of even advanced cases at home. The tendency in England and Scotland is, under their Poor-law system, rather for more of such cases to be treated in institutions, such as union infirmaries, &c. As I have pointed out before,[1] Dr. Newsholme has, I believe, shown that typhus fever has been brought to the point of extinction by its institutional treatment, acting in conjunction with the removal of the motives for vagrancy. Phthisis has been rendered even more prevalent than formerly by increasing for this disease domestic at the expense of institutional treatment and by thus continuing the enormous number of domestic foci of this disease which are implied by the home medical treatment of phthisis among the poor.

In dealing with phthisis in Ireland we want (1) to know where the disease is and not alone where the deaths occur; (2) provision of hospitals, sanatoriums, and dispensaries for its treatment; (3) improvement in sanitary conditions; and (4) education of the people in the hygiene of the prevention of the disease. And it is because these are the main principles of Mr. Birrell's Bill that those (like myself) who have tried to do some work for their country in this anti-tuberculosis campaign hope it will pass.

I am, Sir, yours faithfully,

Oct. 5th, 1908. JOHN BYERS.

PS.—Since writing this letter I see that the International Congress on Tuberculosis at Washington on Oct. 3rd (last Saturday) passed resolutions advocating the adoption by all Governments of compulsory notification of cases of tuberculosis.

[1] THE LANCET, Jan. 25th, 1908, p. 209.

To the Editor of THE LANCET.

SIR,—Let us see where we are. A Bill is before Parliament making the notification of tuberculosis compulsory in Ireland but not in England. I, as a humble member of a sanitary authority, venture to object to this special legislation. If Great Britain decides to adopt compulsory notification of phthisis, I am willing that Ireland be also included, but I object to penal legislation for one country more than another. I insist that no sufficient case has been made for exceptional treatment and that the statistics in Ireland are unreliable, as some 20 to 25 per cent. of deaths registered here are not certified by medical men. I have also hinted that although Lady Aberdeen's campaign seemed to favour compulsory notification, it should not be taken too seriously—that, in fact, it was not controlled by those representing the majority of the people.

My friend Dr. M. F. Cox takes me to task. Let me say that I consider him, with Dr. McWeeney and others, as altogether on the popular side, and as my masters in medical science, but I am unconvinced of their wisdom in this matter. Let us take, as my Lord Bacon would say, a crucial instance. Dr. Cox has probably one of the largest practices amongst consumptive patients in Ireland. He argues strongly that on every medical man should be imposed an obligation, enforceable by fine or imprisonment, to notify every case. Now for many years past the corporation of Dublin has begged practitioners to voluntarily notify cases of phthisis, in order that they might disinfect premises, &c. How many cases has Dr. Cox notified for the past five years? How many cases have all the Court physicians who now clamour to have their humbler brethren made common informers by Act of Parliament notified for the past five years? I venture to say not 2 per cent. of the entire number which they have attended, and I shall be glad to be corrected if I have understated the fact. Dr. Cox chides me for not repressing the discontent which is arising amongst public boards about this Tuberculosis Bill, but seriously I am gravelled for lack of argument, and I beg to be helped. It happens that I am the only medical practitioner on the various city public boards—the Dublin corporation, the Richmond Lunatic Asylum, and the North and South Dublin board of guardians—and I am called on to excuse or explain the action of the medical faculty to my colleagues whenever they find fault with it. What answer can I give as to why the doctors did not think it necessary to notify consumption voluntarily when begged to do so by the corporation, except in a few trivial cases, and why it becomes a matter of the gravest importance for the nation's weal to notify every case, provided a half-crown fee is attached by Parliament? Far be it from me to suggest that any of my medical brethren is influenced in the slightest degree by the fee, but I am only recounting a fact when I state that the public boards who are called on to pay the half-crowns contain many members who think otherwise, and that I find it almost impossible to persuade them to the contrary when they have practical experience that when the fee is paid cases are notified, and that when practitioners are asked to notify without fee in order that sanitary matters may be set right very few are found to do so, although surely the necessity is the same.

Dr. S. Agnew takes rather a broader view of the subject, but probably he will agree that in a country where no doctor attends some 24 per cent. of deathbeds it is futile to expect people to go to a physician and be booked as consumptives for the rest of their lives. Seriously, what are the sanitary authorities to do when you have notified a person as phthisical? If you tell us that a patient has typhus, typhoid, plague, or small-pox we are at least logical; we are prepared to provide for him with proper care in a hospital until he is well—or dead. But what are we to do with the consumptive? Of course, we can send him tracts about his disease, a nurse to advise him to keep open his windows, a sanitary inspector to look after his drains—but what of that? He will be dismissed from his employment; obviously, and as a principle of common law, you can compel no man to work or live with a certified consumptive. Shall we send them all to sanatoriums? If there are 100,000 in Ireland, as Lady Aberdeen's friends say, the cost, based on English experience

of establishment and upkeep, will be ten millions a year, and then if a local authority wish to build a sanatorium they are faced with the express declaration of Dr. Cox's College of Physicians—that it is an extravagant and impossible outlay for a country like this.

The only real effect of the Bill will be to drive patients from the physician to the quack. There will be compulsion on the doctor to notify every consumptive who comes before him, but none on the consumptive to go to the doctor; he can roam at large and go where he will, spreading contagion as heretofore, impossible to check as long as he avoids the physician. The latter may indeed be called in at the end, but only when curative or preventive measures are alike futile. If it is granted, then, that compulsory notification can only do practical good when all cases of phthisis are notified, what percentage of people will present themselves for notification in a country where already nearly a quarter of the people die without calling in the doctor?

I am, Sir, yours faithfully,

Dublin, Oct. 4th, 1908. J. C. MCWALTER.

THE FEEDING OF ELEMENTARY SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—The beginning of the provision of meals for school children has, of course, opened the question of methods to be used in selection. The public and many of its committees, accustomed to hearing evidence given by medical men on the subject of starvation and looking also to the profession to dogmatise on all aspects of dietetics, have erroneously assumed that by inspection and examination of children the medical man is able to say that one child should be fed by the ratepayers whilst another may be left to the care of its parents. Anyone with experience must be aware that this is a mistaken conclusion. Starvation may, of course, be recognised, but what is wanted in the case of the children is the recognition of *underfeeding* which may perhaps have continued only for a week or so. In the majority of cases such a diagnosis is absolutely impossible.

Weighing and measuring, however useful in providing evidence of "tendencies," give practically no certain information as to the individual. The average healthy child seems to have an extraordinary vitality and may be *underfed*, I do not say *starved*, for long periods and yet remain apparently in excellent health, though it is probable that its future growth is being injuriously influenced. If measurements and appearances are not to be relied on, by what is the diagnosis to be made? Even in cases where it is obvious that the tissues of the child are not being sufficiently nourished it is always possible that the absorption from the digestive tract or metabolism is at fault. We have all seen cases of children from good homes who if dirty and dressed in rags would at first sight have been considered as insufficiently fed.

Leaving aside such cases where the appearance makes it obvious that something is wrong either with the child or its feeding there remain the underfed children of whom I first spoke; these, healthy in appearance, cannot be recognised with certainty by anyone as being insufficiently fed. It is possible to point out cases that should be fed but it is not possible for the medical man on inspection and examination to affirm that children are not underfed. The only possible method, if selection is to be exercised and mistakes are to be avoided, is that of visiting the homes and acquiring information there. Of course, I do not suggest that the doctor should do this.

My reason for writing this letter of truisms is that already in places where the medical men are helping in this work—and it is certain they should help—there is a tendency to leave the decision on the question of feeding individual children entirely in the doctor's hands. If he reports that "there is no evidence on examination that the child A. B. is underfed" it is immediately concluded that he means that the child is sufficiently fed at the time of examination, a statement which no medical man would think of making without further information than inspection affords. The fallacy has arisen in the lay mind from the confusion of "starvation," which is recognisable, with "underfeeding," of which it is very difficult to be certain. It seems to me important that we should make it clear that we cannot be sole judges in this matter in all cases.

I am, Sir, yours faithfully,

Blackburn, Sept. 29th, 1908. MILES B. ARNOLD.

CANTHARIDES POISONING.

To the Editor of THE LANCET.

SIR,—Since communicating with you recently *re* a case of acute cantharides poisoning in an adult,[1] a second case of a very similar nature has come under my notice and I venture therefore to record these few additional facts.

The patient, an Austrian subject, was admitted to one of the private wards of Johannesburg Hospital on July 26th, under the care of Dr. H. B. Currie, giving a history as follows. He was taken ill on Saturday, July 18th, with (1) stabbing pain in the left side just at the costal margin, and (2) pain in the knee-joint (right). On the 24th he developed a cough, which was associated with scanty mucopurulent expectoration of a greenish tint, whilst the pain previously in existence became intensified and shortness of breath on exertion was experienced. Accordingly, he consulted a practitioner in town who advised the application of a blister. At 8 A.M. on the 25th a piece of plaster (emplastrum cantharidis B.P.), measuring 5½ inches by 4½ inches, was applied to the chest wall below and to the outer side of the left nipple. 13 hours afterwards (at 9 P.M.) the first symptoms appeared. The patient states that he felt a desire to pass urine every hour or so and could not keep (i.e., retain) it for a longer period. Pain was experienced at the end of the penis when the act was nearing completion; the urine voided was the colour of beetroot water. Headache developed in conjunction with the other symptoms, but there was neither vomiting nor purging; indeed, it appears that for the first 48 hours the bowels remained inactive.

On admission, on Sunday, July 26th, the physical signs indicative of disease were those of pleurisy with effusion on the left side. There was a raw surface measuring 5½ inches by 4½ inches below and to the outer surface of the nipple. The temperature was 102° F., pulse 106, and respirations 39 per minute. The patient's tongue was heavily coated. His bowels had not been opened since the 24th. The right border of the heart extended a finger's breadth beyond the edge of the sternum; the apex beat was well defined, being visible in the fifth left interspace at a point one inch internal to the nipple line (very little displacement noted). The first and second sounds were clear at the apex and there was no suspicion of a murmur. The belly wall was not rigid and there was a complete absence of abdominal pain and tenderness. The patient apparently did *not* experience pain in the region of the kidneys. There was no undue frequency of micturition though a good deal of pain of a burning nature was present just within the orifice of the urethra towards the end of the act of micturition. The urine was loaded with amorphous urates and red cells and yielded after careful filtration a well-defined cloud of albumin. The specific gravity of the filtered urine was 1028, and it was acid in its reaction to litmus paper. A subsequent analysis made on July 28th yielded results as follows: Specific gravity of filtered urine, 1027; reaction of filtered urine, acid; fairly dense cloud of albumin precipitated on warming the solution; centrifugalised deposit found to consist of amorphous urates, leucocytes, red blood cells, granular casts, and a few kidney cells. A third analysis carried out on the 30th demonstrated the existence of numerous kidney cells. The specimen of urine selected for examination proved turbid from precipitation of mucus and urates but cleared up on gently warming. Its specific gravity was 1022 and reaction was acid as on previous occasions. The centrifugalised sediment yielded one or two red blood corpuscles, a fair sprinkling of leucocytes, several short granular and hyaline casts, a few epithelial cells from the urinary passages, and quite a number of renal epithelial cells with coarsely granular protoplasm, scattered and in groups of from 20 to 30 or more. On August 1st the chief change noted was a diminution in the number of formed elements. Beyond a few truncated granular casts and kidney cells all in an advanced stage of degeneration there

[1] See THE LANCET, Sept. 12th, 1908, p. 800.

was nothing visible, red and white blood corpuscles being conspicuous by their absence. The final examination was conducted on August 5th when, apart from any marked alteration in the character of the physical signs, the urine was found to be normal, in colour pale amber tint, reaction acid with litmus as indicator, specific gravity 1022, no albumin, no deposit, but just a trace of mucus in suspension, as is commonly observed in the case of healthy individuals.

The points of interest are these:—1. The comparative length of time that elapsed before symptoms manifested themselves (12 hours). This may be accounted for in part by the character of the preparation used, the proportion of the active ingredient in the plaster being 1 in 3 approximately and in the liquor 1 in 2. The personal factor has likewise to be taken into consideration, patients varying, no doubt, in their susceptibility to the influence of the drug. In this direction it is of interest to recall certain observations made by Christison in dealing with the subject of poisoning by cantharides. He remarks that "it is probable that this is one of the poisons whose operation is liable to be materially affected by idiosyncrasy. The medical dose is from ¼ gr. to 2 grs. of the powder, and from 10 drops to 2 drs.[2] of the tincture. But Dr. Beck has quoted an instance where 6 ozs. of the tincture were taken without injury. On the other hand, Werlhoff has mentioned the case of a lad who used to be attacked with erection and involuntary emission on merely smelling the powder." This statement, adds Christison, though extraordinary, is not without support from the parallel effects of other substances. 2. Absence of symptoms due to the manner in which the drug is excreted by the gastro-intestinal mucous membrane; there was neither vomiting nor diarrhœa; indeed, it was necessary to administer purgatives before the bowels could be induced to act. 3. Absence of symptoms referable to the genital organs; no heat, no pain, tenderness, or swelling of the parts having been observed, and no spermatozoa having been detected in the urinary sediment, though looked for on several occasions. Christison remarks that whilst "a great number of cases are on record, but few have been minutely related. Sometimes cantharides have been swallowed for the purpose of self-destruction, sometimes for procuring miscarriage; but most frequently on account of a prevalent notion that it possesses aphrodisiac properties, it has been both voluntarily swallowed and secretly administered to excite the venereal appetite. That it has this effect in many instances cannot be doubted. But the old stories which have been the cause of its being so frequently used for the purpose are many of them fabulous and all exaggerated. Often no venereal appetite is excited, sometimes even no affection of the urinary or genital organs at all, and the kidneys and bladder may be powerfully affected without the genital organs participating. It is established, too, by frequent observation that the excitement of the genital organs can never be induced without other violent constitutional symptoms being also brought on to the great hazard of life."

The patient is convalescent at the present time, a natural cure having been effected by resorption of the pleural exudate. The urine is quite normal. In conclusion, I beg to state my indebtedness to Dr. Currie for permission to publish brief notes on the case.

I am, Sir, yours faithfully,

J. STANLEY AVERY, M.B., B.S. Lond.,
House Physician, Johannesburg Hospital.

THE TREATMENT OF INOPERABLE CANCER.

To the Editor of THE LANCET.

SIR,—In his most interesting paper on this subject in THE LANCET of Oct. 3rd, p. 997, Mr. Henry Morris does not refer to the advisability of the systematic examination of the blood. It is a matter of common knowledge that the white corpuscles are increased in number and altered in relative proportion to each other. At the same time the red cells are as a rule diminished. It would appear that in these facts there is to be found a starting point capable of being used in the investigation of possible remedies and one to which sufficient attention has not yet been given. It is reasonable to suppose that if the definite change in the blood which occurs in all cases of advanced cancer can be rectified a cure may result. A systematic and thorough investigation of the condition of the blood cells, especially of the white, carried out during any form of experimental treatment at any of the institutions specially devoted to the treatment of cancer would probably give most valuable information. By our treatment the red cells quickly increase to normal or over, but it is much more difficult to reduce the number of the white corpuscles to the average of health.

We are, Sir, yours faithfully,

SKENE KEITH,
GEO. E. KEITH.

Upper Berkeley-street, Portman-square, W., Oct. 5th, 1908.

[2] The present official dose of the tincture of cantharides is from 5 to 15 minims, or from 2 to 5 minims if used repeatedly.—ED. L.

AN OPERATION FOR PARAPHIMOSIS.

To the Editor of THE LANCET.

SIR,—I shall be grateful if you will allow me to bring before your readers the following procedure in cases of paraphimosis. 1. An annular incision is made through the mucous membrane of the foreskin a quarter of an inch from its reflection from the glans penis; this incision reaches down to the submucous plane. 2. A second annular incision is made through the skin of the penis half an inch from the mucocutaneous junction; this incision reaches down to the subcutaneous plane. 3. A sagittal incision is made along the dorsum connecting the two annular incisions and as before reaching down to the submucous-subcutaneous planes. 4. The collar of tissue thus marked out is peeled off in the above plane. 5. All bleeding vessels are secured and tied with catgut. 6. The cut edges of the skin and mucous membrane are approximated by a series of discontinuous catgut sutures.

The following points illustrate the advantages of this method: 1. Reduction in old-standing cases can at the best only be performed (*a*) by the exercise of much force and with considerable pain to the patient; or (*b*) "the narrow constricting band caused by the orifice of the prepuce must be divided on the dorsal aspect. This will free the parts which can be subsequently drawn forwards, and after the œdema has been reduced by applying lotio plumbi for a few days circumcision may be advantageously undertaken" (Rose and Carless). 2. Circumcision at a later date is generally advisable, thus necessitating delay and a second anæsthetic. 3. The operation can be safely undertaken, even in these cases where local destruction of tissue has resulted from pressure.

I am, Sir, yours faithfully,

G. H. DIVE, M.R.C.S. Eng.

St. Bartholomew's Hospital, Sept. 30th, 1908.

THE MEDICAL AUTHORSHIP OF THE THIRD GOSPEL.

To the Editor of THE LANCET.

SIR,—In an annotation in THE LANCET of Sept. 26th you adduce strong evidence to prove that both the Third Gospel and the Acts of the Apostles were written by St. Luke. Incidentally I think this fact affords a proof that the Second Gospel was written by St. Mark. In Paul's first journey with Barnabas they were accompanied by Mark, who left them on the way, and as Paul himself said "went not with them to the work." When they proposed a second journey Paul objected so strongly to Mark accompanying them that he and Barnabas parted and Mark accompanied Barnabas whilst Paul selected Silas as a companion. For some unassigned reason Silas appears to have ceased to be Paul's companion and his place was taken by Luke who accompanied Paul on his last journeys. It would be only natural that Mark should retain some of the ill feeling which arose during the strife between Barnabas and Paul about him and should include also Paul's companion Luke. It is curious to note that while St. Luke simply mentions the case "of a woman having an issue of blood 12 years, which had spent all her living upon physicians and neither could be healed by any," Mark says, "She suffered many things from many physicians but was nothing better but rather grew worse." In this expression there appears a certain amount of bitterness against the profession to which St. Luke belonged, and which, if hardly to be expected from an evangelist, was nevertheless entirely human, and I

think tends to show that Mark was actually the author of the Gospel which bears his name.

I am, Sir, yours faithfully,

Oct. 6th, 1908. A PHYSICIAN.

DEGREES FOR LONDON MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—I have been much struck by the one-sided view you take of the question of an M.D. degree for London students. I think that graduates of the University of London should have something to say on this subject. I may be writing from a purely selfish point of view, but I am certain that I am giving the opinion of many fellow graduates. The M.D. London was looked upon both by the profession and the laity as the hall-mark of medicine. Why strive to lower it? If everyone can obtain it what value will it have and what recompense can be given to the unfortunate men who worked so hard in the old days to obtain it? As it is, the standard has already been lowered quite enough. If everyone obtains the M.D. London will there be left any higher honour for students to strive after? Surely ambition is of some value, and it does not appear likely that everyone will be content to remain on a dead level. Surgeons would not be pleased if the F.R.C.S. was made accessible to everyone. And after all, is the M.R.C.S., L.R.C.P. a qualification to be ashamed of? Surely it is of more value than many a Scotch or Irish degree. To illustrate the grievances which alterations of this kind cause, I may mention a point which does not appear to have been touched upon previously—namely, that formerly one had to pass a separate examination for the B.S. London, whereas now the degree is styled M.B., B.S., so that although formerly M.B., B.S. stood for two separate examinations, the B.S. being for a higher examination in surgery, now the letters only signify the ordinary pass examination. Therefore the time and trouble spent over the old B.S. degree now counts for nothing.

In conclusion, Sir, if everyone wishes to be styled "Doctor" there is no objection, but do not lower the standard of the University of London examinations to allow them to obtain this title.

I am, Sir, yours faithfully,

M.B., B.S. LONDON.

THE SECOND CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY AT BRUSSELS.

(FROM OUR SPECIAL CORRESPONDENTS.)

(*Continued from p. 1037.*)

Acute Angiocholitis.

ON the second day of this Congress Professor QUÉNU and Dr. DUVAL (Paris) made a communication upon Acute Angiocholitis, which they said was always due to microbic infection, the microbes reaching the liver either by the bile ducts or by the hepatic artery and portal vein. Infection along the vascular system was, however, more common in the primary forms due to pneumococci, influenza, and cholera, whilst secondary angiocholitis was associated with gall-stones, the penetration of foreign bodies into the bile ducts, and pregnancy. Angiocholitis also occurred in the course of piles and of appendicitis. Treatment consisted in operation, during the quiet stage if possible, drainage of the bile ducts and gall-bladder following upon cholecystotomy.

Cancer.

The meeting then resumed the discussion on Cancer, and Professor CZERNY, the President, presented his report upon Cancer of the Œsophagus and Stomach, Liver, Biliary Ducts, Pancreas, and Peritoneum. He thought that cancer of the œsophagus should be operated upon whilst it was still localised and he preferred operation to the use of bougies. Carcinoma of the gall-bladder was so often secondary to gall-stones that especial care should be taken to recognise and to treat them early. Cancerous peritonitis was nearly always secondary to cancer of a neighbouring organ, though the primary lesion might be difficult to discover even at the necropsy. The treatment of cancer of the stomach, as was well known, had proved very satisfactory, and Professor Czerny advocated a better selection of cases rather than more extensive operation. Cancer of the pancreas, he thought, was extremely difficult to recognise during life, and although the organ might be removed in part he considered palliative measures to be the more satisfactory.

Mr. D'ARCY POWER (London) brought forward a case of Primary Malignant Disease of the Spleen. He showed the specimen, which weighed 66 ounces. The patient was a woman, aged 47 years, who died six months after the operation. He stated that the case was the twelfth of which a record existed. All the cases were sarcomatous. Splenectomy was performed; five cases recovered and seven were cured.

Abscess of the Liver.

Reports on Abscess of the Liver were presented by Dr. LEGRAND (Alexandria) and by Dr. VORONOFF (Cairo). They considered that alcoholism was a factor in producing a tendency to amœbic or pyogenic infection and agreed that an operation ought to be performed as soon as pus was recognised. Plugging was the only way of arresting hæmorrhage during operation and no reliance should be placed upon the thermocautery or forcipressure when dealing with bleeding from the liver.

Professor PAYR (Greifswald) pointed out that much was still required to complete the diagnosis of tumours of the liver. He thought that the severe pain which often accompanied simple tumours of the liver and the tendency towards their association with malignant disease justified early surgical interference in all cases where they could be recognised.

Anæsthesia.

Reports on anæsthesia were presented by Professor VALLAS (Lyons), Dr. LOTHEISSEN (Vienna), Professor REVERDIN and Dr. BERGALONNE (Geneva), Dr. ROUFFART and Dr. WALRAVENS (Brussels), Professor REHN (Frankfort), Dr. ZAHRADNICKY (Bohemia), Dr. MOTY (Paris), Dr. MACARTHUR, and Dr. ALEXIUS VON HINTZ (Maresvasarhely).

Surgery of the Spinal Cord.

Professor F. DE QUERVAIN (La Chaux-de-Fonds) introduced a discussion on Injuries of the Spine and Spinal Cord. In his paper he pointed out that there were no definite signs of spinal concussion, that was a functional disturbance without any anatomical lesion. When a case of spinal injury could be examined at once it was generally possible to distinguish between a partial and a total lesion of the cord, but later it might not be possible. When the tendon reflexes were present it was practically certain that a total lesion of the cord was not present, but the converse of this proposition was not always true. The nervous symptoms present did not enable a diagnosis to be made between compression and contusion of the spinal cord. From experiments on dogs and rabbits there was no probability of success in suturing the spinal cord. Neither extradural nor intradural hæmorrhage of the spinal cord was an indication for operation, except perhaps when a hæmatoma of the cervical cord was causing interference with respiration, but the diagnosis would be very difficult. When a diagnosis of hæmatomyelia was made an operation should be performed. An operation was also indicated when the diagnosis suggested that the symptoms present were due to fracture of the laminæ of a vertebra or when a skiagram showed that a bullet was in the neural canal. An operation was advisable, though the chances of success were small, when an irreducible fracture-dislocation was present, or when a splinter of bone was compressing the cord. At present an operation in a total transverse section was looked upon as useless, but if the reported successful case was confirmed by the work of others then an operation would be clearly indicated in nearly all such cases. Dr. de Quervain had collected 218 cases of operation for injury of the spine and cord, with the result that recovery followed in 13·8 per cent., and of these in 10·5 per cent. the improvement was certainly influenced by the operation; 22 per cent. were improved; in 37·2 per cent. no obvious change was present, in 1·8 per cent. the operation appeared to do harm, and in 25·2 per cent. the patient died.

Professor BERARD (Leipsic) reported on Tumours of the Spinal Cord and urged that in doubtful cases there should always be a consultation between the physician and the

surgeon in attendance. Early and extensive operation was necessary if the symptoms pointed to the presence of a tumour.

Dr. MACCOSH (New York) brought forward a case of Sarcoma of the Spinal Cord removed by operation. The patient was alive and well six years later. The laminæ and spines of three dorsal vertebræ were removed but the patient's back had not been materially weakened.

Hernia.

Dr. WILLIAM SHEEN (Cardiff) contributed a paper on the Etiology of Hernia. He discussed it from the medico-legal standpoint and showed that the sudden development of hernia was clinical and not pathological, for the sac must have been already present since the sudden formation of a sac with its contents is impossible.

A discussion on the Radical Cure of Inguinal Hernia was opened by Dr. R. ALESSANDRI (Rome). In his paper he laid down the essentials of the operation. They were: (1) the excision of the sac as high as possible without leaving any depression in the peritoneal wall; and (2) the formation of a complete and firm wall. After an examination of the various procedures he described in detail Bassini's method, and mentioned the variations for the different forms of inguinal hernia; and lastly, he discussed the question of the material for the sutures, and the length of duration of rest required after the operation.

Dr. PETROVITCH (Nisch) had operated on 7000 cases of inguinal hernia during the last ten years in Servia. His patients were militiamen who remained under observation for from one year to eighteen months afterwards. His mortality was 0·13 per cent.; recurrences, 0·6 per cent.; and a good result in 98·85 per cent. Bassini's method was employed 1002 times, Kocher's in 266 cases. One method did not seem better than the other.

Dr. SUBBOTITCH (Belgrade) gave an account of his method of treating the sac in those difficult cases where it could not be readily separated from the spermatic cord.

Dr. VANVERTS (Lille) stated that he secured the pedicle of the sac with sutures but did not necessarily remove it.

Dr. HILDEBRAND (Berlin) described the operative treatment of femoral hernia, which was further discussed by Dr. LOTHEISSEN, Dr. LÉON BÉRARD (Lyons), and Dr. VANVERTS.

Professor FRAENKEL (Berlin) read a report on Umbilical Hernia, whilst Dr. LOTHIOIR (Brussels), and Dr. NOVE-JUSSERAND (Lyons) dealt with Hernia in Children.

Professor KALLIONTZIS (Athens) and Dr. VERHOEF (Bruges) agreed that Bassini's operation was the best method of securing a radical cure of inguinal hernia.

Entertainments.

It appears to be necessary to infuse a certain amount of gaiety into every congress, even when the meeting is taken as seriously as has become the custom at the International Society of Surgery. The executive committee at Brussels made every preparation to enable the members to enjoy themselves, whilst a ladies committee, under the management of Madame Depage and Madame Lothioir, made such excellent arrangements that their guests saw many of the beautiful outskirts of Brussels with the least possible degree of fatigue. The public entertainments consisted of an evening reception by the Belgian Society of Surgery at the Cercle Artistique et Littéraire; a reception by Professor Czerny, President of the Congress, in the beautiful house of Dr. Depage; a gala performance at the Théâtre Royal de la Monnaie; and a reception at the Hôtel de Ville, where the vast suite of rooms was seen to perfection. There were also most charming drives to the Bois de Cambre and to the golf club at Tervueren, two of the prettiest suburbs of Brussels. But these public entertainments were thrown into the shade by the lavish private hospitality extended to every member of the Congress, a hospitality which allowed of the formation of many new friendships and the cementing and renewal of many old ones. By such means the members of the great medical profession throughout the world become truly fraternal; individuality remains owing to the barriers of language and upbringing, but constant association gives such a knowledge of each other's peculiarities as to lead to no greater amount of friction than occurs in every large family. Madame Depage, Madame Lothioir, and Madame Willems may therefore rest assured that their efforts will have a great and lasting effect upon the social aspect of European surgery.

The public banquet was held in the hall of La Grande Harmonic and was attended by more than 220 guests. Professor Czerny was in the chair and at the high table were M. De Met, Burgomaster of Brussels; M. Velghe, representing the Minister of Agriculture; the Prince de Keuss, Secretary of the German Legation; Professor Lucas-Championnière; with Madame Sonnenberg, Mrs. D'Arcy Power, and Madame Hartmann. Professor CZERNY proposed in French the toast of "The Organising Committee at Brussels," and after translating his speech into German terminated it with "Vive le Roi des Belges! Vive l'Empereur d'Allemagne." M. VELGHE drank to the health of those members of the Congress who had come from abroad; to the Governments who had sent representatives; and to the success of the next Congress. M. SEGONEL proposed the abstract toast of "The Beautiful Flowers which Decorated the Tables" and coupled with it that of the ladies who had come from all parts to grace the meeting and to add pleasure, beauty, and freshness to the Congress. The toast was received with the greatest cordiality and with the "good fire" characteristic of a French gathering. The banquet was followed by some excellent music and minuet dancing.

The General Meeting.

The general meeting was held on Wednesday afternoon, Sept. 23rd, and was preceded by a meeting of the international committee. It was agreed that the next meeting should be held at Brussels in 1911. Professor Lucas-Championnière of Paris was unanimously elected president; Dr. Lothioir, of Brussels, treasurer; and Dr. Depage and Dr. L. Meyer, also of Brussels, secretaries. Three subjects were chosen for discussion in 1911: (1) The Surgery of the Lung; (2) The Causes and Treatment of Colitis; and (3) The Causes and Treatment of Pancreatitis. At a meeting of the English members present at the Congress Mr. D'Arcy Power, Mr. J. Paul Bush, and Sir William Macewen were chosen to form the national committee for Great Britain and Ireland until the next congress, the senior member to act as a member of the international committee. The national committee was desired to make every effort to enlist the sympathy of English surgeons in the society and to prevent, if possible, such an inadequate representation of British surgery as had occurred on the present occasion.

Conclusions.

The most striking features at the present Congress were the results of the discussion on Cancer and the magnificent exhibition of specimens due to the disease. From all sides, from clinical experience, statistics, maps, from museum specimens, and from the interchange of opinions, it seemed clear that malignant disease was locally infective, certainly to the individual, perhaps in some modified form from one person to another. There appears to be a latent knowledge of its cause which only awaits a keen observer or a fortunate experiment to make clear. The general trend of surgical opinion was against extensive operations and in favour of early treatment with thorough removal whilst the disease was still local. This, however, is only possible when public opinion sets towards early diagnosis. It is hampered at present by the idea that cancer is a painful disease and that because a lump is not painful it cannot be dangerous. In some parts of Austria women and medical practitioners alike have been taught not to disregard the first signs of uterine disturbance at the time of the menopause. The result is shown in the wonderful display of specimens of cancer of the cervix which were exhibited at Brussels, many of the preparations being in a much earlier stage of the disease than is ever seen in this country. It is possible therefore to educate the public until it no longer waits for advanced signs of the disease with implication of lymphatic glands and the neighbouring structures.

It seemed clear that the surgery of the liver was in a less advanced stage than the surgery of cancer. It is evident that comparatively little care is taken in the matter of diagnosis until pain or very obvious signs, often of long standing, compel the patient to seek surgical assistance. The mortality after operations on the liver, therefore, is still unduly high, because exploration of the liver too often shows an extensive inflammation which in the earlier stages might have been remedied with very little danger.

The discussion on anæsthesia brought out the fact that the English-speaking nations are still in advance of their European colleagues in the safe production of general

anæsthesia, whilst the mid-European nations employ intraspinal and local anæsthesia to a much greater extent than is usual in Great Britain. The discussion on diseases of the spinal cord was not productive of anything new. The discussion on hernia produced a number of interesting reports amongst which not the least interesting was that by Dr. W. Sheen of Cardiff upon hernia in relation to the Employers' Liability Act. He states that true traumatic hernia is of rare occurrence and is usually strangulated. The more usual form occurs with a gradual and painless onset, though the rupture may first be noticed at work during a lifting effort.

The meeting suffered from a wealth of material. There were more members anxious to speak than time would permit and some were disappointed. The international committee has recognised this grievance and at the next meeting there will only be three subjects for discussion instead of five as at the present meeting.

It will be seen that every one of the questions discussed was on a matter of great surgical interest, but the mistake is nearly always made in congresses such as these of having too wide a subject for discussion, for if the question is extensive the remarks of subsequent speakers do not deal with the same points and the utility of the discussion is greatly diminished. This is a danger that should be guarded against, for it leads to fruitless meetings. The Congress at Brussels was very happy in the choice of subjects and some advance in surgical opinion should result.

THE SANITARY DEFENCE OF THE HEDJAZ RAILWAY.

(BY THE BRITISH DELEGATE ON THE CONSTANTINOPLE BOARD OF HEALTH.)

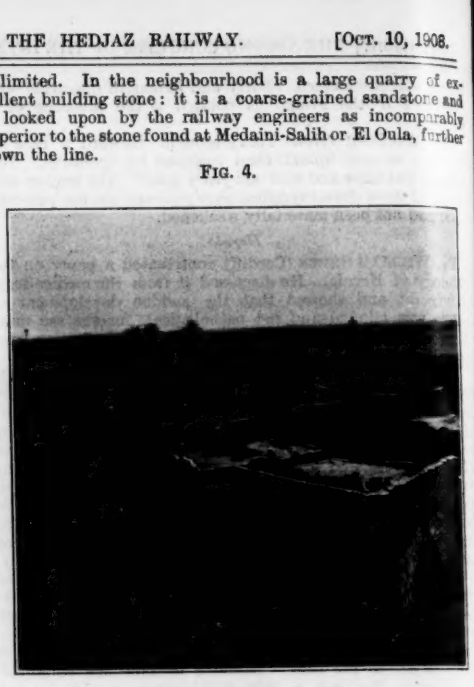
(*Illustrated with Reproductions of Photographs taken by the Author.*)

II.[1]—TEBUK.

FROM Ma'an the Commission went on to Tebuk, about 11 hours distant by railway. Most of this portion of the journey was done by night, so that I can say little of the country lying between the two, but shortly after leaving Ma'an the line passed through a very remarkable bit of scenery. The flat or undulating desert suddenly comes to an end on the brink of a steep descent and here the line, by a series of curves, passes through a gorge or ravine known to the Arabs as the Batn-el-Ghoul, literally the "Belly of the Fiend." The sandstone rocks are of rather fantastic shapes, though much less so than in the gorge leading to Medaini-Salih, to be mentioned later. But their colour is extraordinary; I should rather say colours, for they are striped and blotched in patches of reds, browns, yellows, purple, even green, and almost white, giving a curiously weird aspect to the landscape, particularly as seen at sunset.

Tebuk is situated at the 692nd kilometre from Damascus and consequently is 610 kilometres north of Medina. It lies at a height of 775·3 metres (say 2500 feet) above sea level. The village is about half a mile away from the station in the midst of a highly picturesque oasis of palm trees, figs, and pomegranates. The station is an important administrative centre on the railway. Moreover, Tebuk has always been a place of some consequence on the Pilgrims' Way, as it was here that the Beni Attiyeh, the largest bedouin tribe in this region, were paid their toll-money to allow the passage of the pilgrims. The Commission, for reasons to be discussed later, decided definitely that Tebuk will be the most suitable place in which to establish the permanent lazaret for pilgrims returning from the Hedjaz, and for this reason I propose to describe in some detail the local conditions, more particularly from the point of view of their suitability (or the reverse) for the establishment of such a lazaret. The village occupies a position slightly raised above the general level, but for many miles round the desert is an almost flat expanse; the sandy and gravelly surface shows only slight irregularities, which would offer no difficulties for building purposes. The site recommended for the future lazaret lies to the south of the village and the west of the line. This site would be limited on the north by the railway hospital and on the east by the line, and in the other directions would be practically unlimited. In the neighbourhood is a large quarry of excellent building stone: it is a coarse-grained sandstone and is looked upon by the railway engineers as incomparably superior to the stone found at Medaini-Salih or El Oula, further down the line.

FIG. 4.



The village of Tebuk.

There is an abundant water-supply at Tebuk. It comes from two main sources—a spring in the middle of the village and wells. The spring bubbles up in the middle of a reservoir (or *burket*), of which there are three here, situated, as usual, immediately under the protecting walls of the *kala'at*. The water flows to the other reservoirs and thence by primitive irrigation channels to all parts of the village and appears to be ultimately lost in the sand again. In the

FIG. 5.

Reservoirs at Tebuk.

main reservoir the water was breast deep; it was full of growing weeds and at the edges there was rather an offensive scum, but in the middle there was a bare patch of white sand and here the water could be seen foaming and bubbling up through the sand. The "head" must be considerable to produce such an effect, and it is not altogether easy to say where it comes from; but presumably it is from the distant hills to be seen on either side of the line. These

[1] No. I. was published in THE LANCET of Sept. 26th, p. 971.

hills must be, in any case, some score of miles away. Those on the west of the line form the curiously jagged volcanic range known as the Harra, while on the east is a low range, in which rises a strangely shaped rock, not unlike a gigantic Moslem pulpit in form, and consequently called by the Arabs the *Mumbir-er-Rasul*, or Pulpit of the Prophet. The yield of the spring is very abundant; we endeavoured to make a rough estimate of it by the "weir" method and found that it was then producing over 600 tons in the 24 hours. The possible error of calculation in such an observation (which was of necessity carried out in a rather primitive manner) is considerable, but the yield is in any case very great, and Meissner Pasha informs me that, though it had never before been measured, the yield is certainly over 400 tons per day.

Three wells have been sunk close to the station at Tebuk. The principal one is at the station; it has a diameter of about three metres and a depth of 22·80 metres to the surface of the water. The depth of the water was only half a metre at the side and one metre in the middle. As at Ma'an, a steam pump, with windmill in reserve, has been put up by the well, and raises the water to two large reservoirs on a water-tower. This well yields as much as 400 tons of water per day. The two other wells are situated respectively 150 and 250 metres to the west of the station; they are not provided with pumps, and their yield is not known. We were informed by several persons that an abundant supply of water is found in the plain of Tebuk wherever a well is sunk, and that there is probably a continuous and practically inexhaustible underground layer of water here. On the other hand, Meissner Pasha has some doubts as to the accuracy of this statement. The first well sunk by the railway authorities, he tells me, gave relatively unsatisfactory results, and he thinks that the water exists in all probability in the form of separate underground streams rather than as a continuous layer ("*des veines d'eau plutôt qu'une nappe souterraine*"). At all events, all are agreed that the subterranean water here is in movement and that that movement is towards the west (no doubt towards the Gulf of Akaba and the Red Sea). The importance of this fact is obvious, in connexion with the questions of providing the future lazaret with water and the disposal of the sewage matter of the lazaret without contaminating that water. With regard to the latter point, it is clear that the sewage matter will have to be disposed of well to the west of the lazaret site, particularly if the drinking water is to be derived from wells. With regard to the former it may prove necessary to make several soundings, but there is no doubt whatever that water can be found in the neighbourhood of Tebuk by sinking wells in suitable spots in quantity sufficient for almost any number of pilgrims.

The quality of the water derived respectively from the spring near the *kala'at* and from the large well at the station was found to be very different, as shown by the following analysis. The spring water was clear; had no odour; contained 14·1 parts of chlorine as chlorides, 0·074 part of nitrogen, of which 0·063 occurred as nitrates, 0·003 as free ammonia, and 0·007 as organic nitrogen; it consumed 0·0204 part of oxygen in the permanganate process during three hours at 27° C.; its total hardness was 25·42 and its permanent hardness after boiling 15·32; finally, the "total solids" were 47·8. All the preceding figures represent parts per 100,000. The water from the station well, on the other hand, gave the following results. Its appearance was clear; it had no odour; it contained 36·7 parts of chlorine as chlorides, 0·333 of nitrogen, of which 0·328 occurred as nitrates, 0·002 as free ammonia, and 0·003 as organic nitrogen; it consumed 0·0481 part of oxygen in the permanganate process during three hours at 27° C.; its total hardness was 27·98 and its permanent hardness 18·02; and finally its total solids were 153·5. It will be seen that the well water was inferior in every respect to the spring water. It would be possible to employ the spring water for the lazaret, but it would be in every way preferable that this institution should have its own wells, entirely independent of the village. It will, however, be necessary to make multiple analyses of the waters found in the new soundings to be made near the lazaret site. Should these analyses give results as unsatisfactory as the single analysis of the station well just quoted, then it will become necessary to find means for improving the water-supply. Perhaps the best solution will be the putting up of a large distilling apparatus in which the well water would be distilled before distribution to the pilgrims, as is done in the lazarets of Camaran and Abu-Saad (Jeddah) in the Red Sea. The cost would no doubt be considerable, but it seems probable that this additional outlay would be compensated to some extent by economy effected in the length of drain pipes. For this reason: if the underground water is going to be distilled before being drunk there will not be the same necessity to carry the sewage matter far away to the west of the "cordons," as referred to above. The system of "fosses à fond perdu" will in all probability be adopted and (if a distilling apparatus is put up) it will be sufficient to have these fosses some 20 metres away from the barrier round each cordon, whereas if undistilled water were to be provided to the pilgrims it would be necessary to prolong the drains to such "fosses" at a distance of perhaps some hundreds of metres to the west of the cordons. In any event, the question of the water-supply for the Tebuk lazaret still requires some careful consideration and further observations before it can be regarded as satisfactorily solved.

While on the subject of wells, I should like to call attention to the following. Up to the present neither at Ma'an nor at Tebuk has the water derived from wells sunk in the desert shown any tendency to deteriorate or to become salter with time. But at Hedieh, a place situated between Medaini-Salih and Medina, this has been observed; a well gives fairly potable water for a few days, then it gradually gets more and more brackish, and in perhaps a fortnight's time is so salt as to be undrinkable. It may be recalled that precisely the same phenomenon was observed in the wells sunk in the desert outside Jeddah. In THE LANCET of July 6th, 1907 (p. 51), was published a reprint of a photograph showing the curious honeycombed aspect of the country near Jeddah, resulting from the sinking of innumerable wells. Those wells were sunk quite close to one another and in succession (though at what intervals of time I do not know), yet each is said to have presented the same series of phenomena. What is the explanation? I have been in correspondence with Meissner Pasha on the subject and this highly experienced engineer is equally puzzled. He suggests that at Jeddah the explanation may be that the well is a deep one, passing through an impermeable stratum, and that too active pumping may have led to infiltration of sea-water to re-establish the equilibrium in the undergound water. But no pumps existed at these desert wells near Jeddah, and the explanation is not applicable to wells far from the sea, as in the case of those on the Hedjaz railway. Can it be due to evaporation? This can scarcely be the solution, as these wells are often very deep and the surface of water relatively small. Is the phenomenon due to the action of some unknown micro-organism, producing conditions under which the water, when exposed to the air, becomes capable of dissolving more salts than when not so exposed? Perhaps some of the readers of THE LANCET may be able to furnish the explanation of a phenomenon which is of very practical importance when water has to be provided to large numbers of persons in regions where these conditions prevail. The Commission did not visit Hedieh, where, as stated above, this difficulty with the wells has been met with. A sample of the water from there was, however, procured and the analysis gave the following results. It had a yellow colour and an earthy smell; it contained no less than 142 parts of chlorine as chlorides; the nitrates were not estimated, but there were 0·013 part of nitrogen as free ammonia and 0·010 as organic nitrogen; the oxygen consumed in the permanganate process during three hours at 27° C. was 0·6376; the degree of total hardness was 70·3 and of permanent hardness 43·36; the total solids were 396. This water was clearly utterly unpotable; it was the worst of all the waters examined. To this, no doubt, may be ascribed the fact that during last winter's cholera epidemic Hedieh suffered more than any other place to the north of Medina.

To return to Tebuk, the village here contains only about a couple of hundred inhabitants. They are of a mixed race, largely Abyssinian, and many are little, if at all, removed from pure negroes. There is no *kaimmakam*, and the only representative of Turkish authority is the *mudir* of the village. We here met Sheikh Harb, the well-known head of the Beni Attiyeh tribe. This tribe is said to number some thirty thousand men and people an extensive region, of which Tebuk

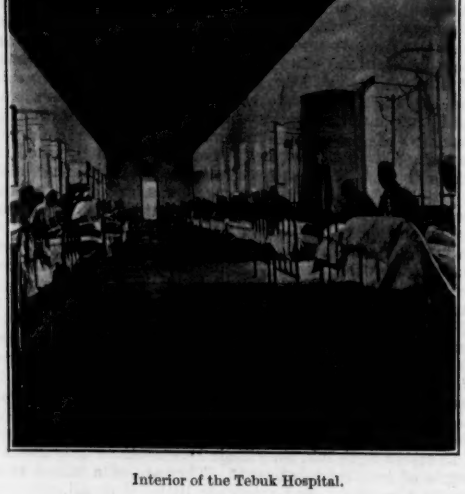
is more or less the centre. Their sheikhs, as also those of the other principal bedouin tribes, were concentrating at Tebuk in order to meet the railway authorities and come to an agreement for guaranteeing the security of the line from attack, and it was by a fortunate coincidence that the journey of the Commission took place just at this moment. On the return journey I had occasion to meet,

FIG. 6.

The Hedjaz Railway Hospital at Tebuk.

at Ma'an and in the desert between Ma'an and Petra, five of the principal sheikhs of the Howeitat tribe, who inhabit the region between Ma'an and the Gulf of Akaba; and in Damascus one of the sheikhs of the Fakir tribe (the cousin of Mutlak, the chief) and Sheikh Hamud, the head of the Welad Ali tribe. The Fakir tribe live in the region to the east and north-east of Medaini-Salih; the Welad Ali in that lying between Medaini-Salih and Medina. Practically

FIG. 7.



Interior of the Tebuk Hospital.

the only tribe to be considered in connexion with the safety of the future lazaret at Tebuk is that of the Beni Attiyeh, and the Commission made a provisional arrangement with Sheikh Harb under which, in return for a small payment, his tribe would guarantee the security of the lazaret and also furnish the required number of men to act as *gardes sanitaires*. The railway has its principal hospital for sick employees at Tebuk. It is a long, one-storeyed building of stone, with roof of Marseilles tiles. It contains one long ward 44·5 metres (say 140 feet) in length and 6 metres wide, and two small rooms at each end; the baths and service rooms are in separate outbuildings. A branch from the main line of the railway runs up to this hospital. At the time of our visit there were about 60 patients under treatment; they were mostly Italian labourers and Turkish troops who had been employed in laying down the line. The exterior and interior of this hospital are shown in the photographs reproduced here (Fig. 6 and Fig. 7).

There are practically no meteorological observations available at Tebuk. I have, however, noted that on June 8th, 1908, the thermometer in the shade stood at 30° C. at 10 A.M., at 34° at 1 P.M., and at 36° at 2.30 P.M.; and that on the 10th it rose to 37° C. at 1 P.M. and to 39° at 2.30. Meissner Pasha tells me that the day temperatures at Tebuk are about the same as those at Medaini-Salih but that the nights are incomparably cooler. The nights, it may be added, were always cool during our brief journey on the line, the thermometer sinking to 25° C. (77° F.) and even lower. Sandstorms are commoner at Tebuk than at Ma'an, but much less frequent than at Medaini-Salih; they occur at Tebuk about once every two months.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE winter session commenced in Birmingham on the first Monday in October and in the Medical Faculty it was inaugurated in the usual way by a conversazione which was, if anything, more than usually successful. The Dean of the Medical Faculty, Professor H. G. Barling, aided by Professor R. Saundby and Mr. John Humphreys, received the numerous guests in the Founders' Room of the University Club, whence they wandered to the various laboratories, lecture rooms, and museums, where a series of attractive exhibitions were displayed. Professor Barling had provided a most excellent concert, and the audience was enthusiastic in its appreciation of Mrs. Ranalow's songs and Messrs. Heath's, Lloyd's and Pickup's instrumental music. Great interest was shown in the radiographs exhibited by Mr. J. Hall-Edwards and Dr. A. Emrys Jones and in the preparations of various types of tubercle and tubercle bacilli, and the photo-micrographs illustrating phases of the life-history of the malarial parasite, the fluid from a plague bubo, and the eggs of various parasites, which were exhibited in the Pathological Laboratory.

The Provident Dispensaries Scheme.

The scheme for the establishment in Birmingham of a series of provident dispensaries, to which I drew attention in my last letter, was carefully and fully expounded to a meeting of the Birmingham and District General Medical Practitioners' Union on Sept. 29th by Mr. Neville Chamberlain. The main objects of the scheme are to relieve the out-patient departments of the hospitals, to supplement the existing provident agencies, and to secure to the medical profession some remuneration from patients who are able to pay something for the work done for them. Mr. Chamberlain pointed out that he and those who had been working with him recognised that hospitals competed with each other for out-patients and in their reports pointed with pride to the number of cases treated. The General Hospital was certainly trying to break through the system which had been established and after giving first aid to certain cases it requested them not to attend again but to go elsewhere for further treatment. One hospital alone, however, could do little, for the people turned away from it could go to some similar institution. Therefore, coöperation between the hospitals was essential if success was to be obtained. To secure such coöperation it was necessary that the staffs of the hospitals should be convinced that the patients turned away could secure satisfactory treatment elsewhere, and the object of the new scheme was to provide the necessary

treatment under proper conditions. The coöperation of the hospitals and the General Dispensary being gained it was still necessary that the aid of the general members of the medical profession should be secured and if this was obtained the scheme offered great hopes of success. After Mr. Chamberlain's exposition was concluded the scheme was discussed and though a certain amount of opposition was apparent a motion deprecating the revival of any suggestion for the establishment of a public medical service was lost by a large majority, and Mr. M. Hallwright, Dr. J. A. H. White, Mr. J. Neal, Dr. G. Bryce, Mr. J. W. Ensor, Dr. H. W. Pooler, and Mr. F. A. L. Burges were appointed to act upon the committee which is dealing with the new scheme.

The Encouragement of Personal Cleanliness.

The city council seems to have faith in the old saying that cleanliness is next to godliness and with the object of encouraging an agreeable virtue it has decided to establish a number of cottage bathing establishments where a bath may be obtained for the sum of 1*d.* and a piece of soap for ½*d.* The first establishment was opened on Oct. 1st in Digbeth where cleanliness is not usually too obviously intrusive. The experiment will be watched with interest and if the establishments succeed and pay their way perhaps no one will have any cause to complain except the heads of families who may have been induced to squander on a single bath a sum of money which, had it been judiciously expended on coal and soap, would have served not only to provide hot water and lather for the whole family but also heat for cooking purposes and warmth for the house. Apparently the city fathers think much water better than a little thrift.

The Birmingham District Nursing Society.

The new home of our District Nursing Society in Summer Hill-road was opened on Oct. 2nd by Mrs. William Kenrick. It is thoroughly up-to-date in arrangement and equipment and will provide accommodation for a superintendent, an assistant superintendent, and 16 nurses. The building has cost £5000. To meet this the committee has provided £2,500, and it appeals to the public for the remaining half and also for additional subscriptions of £450 per annum to maintain the present staff and to provide extra nurses for the Saltley district, where they are urgently needed. The furnishing of the new house and the laying out of the garden have been more than provided for by the generosity of the Right Hon. William Kenrick and Mrs. Kenrick, who have initiated, stimulated, and helped so many useful projects in Birmingham.

Medical Appointments at Bilston.

Some three months ago Dr. T. R. Bailey, the medical officer of health to the Bilston council, received three months' notice to terminate his appointment at the infectious hospital, on the ground that all the medical appointments in the control of the council should not be in the hands of one man. At a meeting of the council on Sept. 23rd the clerk reported that in accordance with his instructions he had advertised the appointment but no applications had been received, and after some discussion an unfortunate incident was terminated by the reappointment of Dr. Bailey.

The Birmingham Hospital Sunday Fund.

At a recent meeting of the general committee of the Hospital Sunday Fund a subcommittee reported that it had considered applications from the Jaffray Hospital, the Hospital for Skin and Urinary Diseases, the Midland Counties Asylum for Feeble-minded Children, and the Crippled Children's Union. The decision arrived at with regard to the various claims was that they could not be acceded to unless other charities with equal claims were similarly treated, and it was resolved that the usual appeal should be made to the clergy and ministers of the city on behalf of a collection to be made on Oct. 25th next and that the proceeds of the collection should be distributed in the same proportion as last year.

Medical Inspection at King's Norton.

At a recent meeting of the King's Norton education committee Dr. Jones reported that the inspection of 1946 children had revealed that 69 per cent. had defective teeth, 25·7 per cent. had enlarged tonsils and adenoids, about 18 per cent. had dirty heads, 4·4 per cent. had spinal curvature, 3·6 per cent. had heart disease, 2·3 per cent. had lung disease, 1·5 per cent. had bad ears, and of 735 cases tested 7·2 per cent. had defective vision. The school hygienic subcommittee recommended the appointment of a school nurse at a salary not exceeding £50, to assist the school medical officer, and although the council had previously refused to make such an appointment the obvious necessity caused an alteration of opinion and the appointment was sanctioned.

Oct. 6th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Farewell Dinner to Mr. George Gibson Hamilton, F.R.C.S. Eng.

A FAREWELL dinner was given to Mr. George G. Hamilton, late honorary surgeon to the Royal Infirmary, at the Adelphi Hotel on Oct. 2nd, by friends and colleagues, on the occasion of his leaving Liverpool to reside in Boscombe, Bournemouth. For the past 25 years Mr. Hamilton had been engaged in surgical practice in Liverpool. His first appointment was at the Children's Infirmary, thence he passed on to the David Lewis Northern Hospital as honorary surgeon, whilst for the last 15 years he had been on the staff of the Royal Infirmary, in the first instance as assistant surgeon, and afterwards succeeding the late Sir William Mitchell Banks as honorary surgeon in 1902. The Lord Mayor (Dr. Richard Caton) presided and in felicitous terms spoke of the good work accomplished by Mr. Hamilton in Liverpool, and of the loss that the city, the Royal Infirmary, and the medical school will sustain through his departure. In reply to the toast of his health, proposed by Dr. E. W. Hope and supported by Mr. Charles Lancaster, Mr. Hamilton said he felt flattered that so many colleagues and friends were with him that night, notably the Lord Mayor who with all his numerous engagements had found time to be present. He also remembered that Dr. Hope, now the esteemed medical officer of health, had been a house surgeon with himself, somewhat over a quarter of a century ago. In those days house surgeons were appointed to the Liverpool hospitals from all parts of the country. He hoped to see soon arrangements made by which house surgeons should be regularly interchanged between the large teaching hospitals as had been the custom in Germany for a considerable time. Mr. Edgar A. Browne then proposed the health of Mrs. George Hamilton in a charming and humorous speech. Mrs. Hamilton and a few other ladies were present to hear the speeches. Covers were laid for about 60 gentlemen.

Liverpool Royal Infirmary.

At a meeting of the election committee of the Royal Infirmary held on Sept. 30th Mr. F. A. G. Jeans was appointed honorary assistant surgeon in succession to Mr. William Thelwall Thomas, promoted honorary surgeon on August 10th.

Cost of the Civic Hospitals for Infectious Diseases.

In the recent report of the medical officer of health on the Liverpool city hospital accommodation it is shown that over 40 per cent. of the total accommodation is provided in buildings of a temporary nature, and as recent experience has proved that the present accommodation is only barely sufficient for actual requirements it is of the greatest importance that the existing buildings, whether of a permanent or temporary character, should be maintained in a thoroughly satisfactory condition, otherwise the situation might become serious at any time. The cost of maintenance of the city hospitals for 1907 was: north hospital, £9224; south, £5570; east, £8250; Parkhill, £12,188; Fazakerley, £11,244; and Fazakerley annexe, £4080; making a grand total of £50,556.

Oct. 6th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

Presentation of Portraits of Sir T. Clifford Allbutt and Mr. T. Pridgin Teale to the General Infirmary.

SOME time ago it was decided by the numerous friends of Sir Clifford Allbutt and Mr. Teale that they should be requested to sit for their portraits in order that there should be preserved in the city with which they had been so long

associated some permanent memorial of two of its most distinguished citizens. The movement was taken up with enthusiasm, and the painting of Sir Clifford Allbutt's portrait was entrusted to Mr. A. S. Cope, A.R.A., and that of Mr. Teale to Mr. W. W. Ouless, R.A. A pleasing ceremony was held at the General Infirmary on Oct. 2nd when, in the presence of a large meeting of the subscribers and happily also in the presence of the recipients of the honour, Dr. J. E. Eddison, speaking on behalf of the subscribers, presented the portraits to the chairman of the board of the infirmary, with a request that they should be hung on the walls of that institution. Though the subscribers to the fund included, not only many medical men, but a large number of the general public, no one could have been found more qualified by long personal friendship with his two colleagues and by the possession of tact and ability to say the right thing in the right way than Dr. Eddison. He reminded his audience that Dr. Allbutt and Mr. Teale were appointed to the infirmary in the same year—namely, in 1864—and that they resigned their positions on the active staff on the same day after 20 years' service. In the building of the infirmary, which was opened in 1869, they took an active part and much of the excellence of the arrangements therein was due to their care and supervision. Speaking with some natural restraint of eulogy in their presence he paid a graceful compliment to the excellence and high character of the professional and public work both of Sir Clifford Allbutt and Mr. Teale. Mr. Charles Lupton, the treasurer of the infirmary, having accepted the portraits on behalf of the institution, Sir Clifford Allbutt and Mr. Teale briefly addressed the meeting. The two portraits are unquestionably excellent and are worthy as works of art to a place of honour on the walls of the infirmary.

Opening of the Medical Session.

After the presentation of the portraits at the infirmary the winter session of the Faculty of Medicine was informally opened by the distribution of the prizes gained by the students during the past year. The chair was taken by Mr. Teale and there were present Dr. N. Bodington, the Vice-Chancellor of the University; the Right Hon. C. G. Milnes Gaskell; many members of the teaching staff; Professor A. S. F. Grünbaum, the Dean of the Faculty of Medicine; and Sir Clifford Allbutt who distributed the prizes and awards. A short address was then delivered by Sir Clifford Allbutt, which was listened to by the students with marked appreciation. I have heard Sir Clifford Allbutt speak on many and varied occasions during the last 25 years, sometimes on occasions more or less formal, sometimes on discussions at the medical societies and elsewhere, yet I doubt if I have ever heard him use his natural gifts and his absolute mastery of the English language with more grace and wisdom. His peroration was one that will long remain in the minds of all who heard it.

Oct. 6th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Winter Session in Edinburgh: Introduction of Professor Walker and Professor Caird.

THE winter session of the medical classes in Edinburgh was opened on Oct. 1st, about a fortnight earlier than has hitherto been usual. Although the date was in the middle of the week the students turned up in commendable numbers. The new professor of chemistry delivered his introductory address at 10 o'clock in the McEwan Hall to a large audience. Principal Sir William Turner occupied the chair and in a few suitable words introduced Professor James Walker. The lecturer took for his theme the question of the "Transmutation of Metals," a subject which he treated in a very interesting manner. In concluding his lecture he struck a note which it may be hoped may often be struck again. He said that he was not a believer in science in the sense that any ultimate value to mankind by the discoveries of science should be rigorously excluded from the mind of the scientist. No better stimulus could be given to the scientist than to know that his work if successful might be of use in the daily life of his fellow men. A pure scientist was a pure myth. Those of them who did not go out into the world and did not quite sever the leading strings of their *alma mater* were in great danger of mistaking the university for the universe. The greater men of science whose thought actuated and stimulated their own and succeeding generations fell into no such error. They thought of their work not only in relation to the progress of science but also to the betterment of mankind. At noon, in the same hall, the Principal again presiding, Professor F. M. Caird was introduced to a large audience. Professor Caird gave a rapid but artistic survey of the development of surgery in Edinburgh from the year 1505. He showed the place which the first Munro occupied and the great influence exercised by John Bell. He compared hospital treatment then with now, adorning his lecture by excerpts from old case-books.

Resignation of Dr. J. Murdoch Brown.

Many old students of the Edinburgh school will regret to learn that Dr. Murdoch Brown has resigned his post as senior assistant physician to the Royal Infirmary on account of the continued unsatisfactory character of his health. This makes a vacancy at the infirmary, and it is satisfactory to know that there will be several eligible candidates.

The Medical Education of Women in Edinburgh.

Notwithstanding the agitation of the past summer the School of Medicine for Women, which has its headquarters at Surgeons' Hall, has had a gratifying opening of its winter session. Students have more than enough to occupy their minds with their undergraduate studies, for the present curriculum requires earnest thought and steadfast purpose if satisfactory results are to be attained.

The Future of the Glasgow Hospital for Skin Diseases.

The directors of the Glasgow Hospital for Skin Diseases have summoned a meeting of subscribers to consider the present position of the hospital. The history of the hospital is shortly as follows: It was founded in 1871 and in 1878 removed to its present building in Elmbank-street, where the treatment of outdoor patients was carried on. Accommodation for indoor treatment has been provided in the Western Infirmary of Glasgow under an agreement whereby, in return for a sum of £2000 contributed by the hospital towards the infirmary buildings, the hospital has enjoyed the use of two wards of ten beds each, male and female, in the infirmary, with the right of appointing the physician to those wards. Till his death that appointment was held by Sir Thomas McCall Anderson. Up to the end of last year 3208 patients obtained the benefit of treatment in those special wards. In view of the advantages which have resulted from this virtual union of the two institutions as regards the indoor department the directors think that the time has now come when it would be for the public advantage if the dispensary work now carried on at Elmbank-street were also transferred to the Western Infirmary buildings. There is already there a large and well-equipped general dispensary, and the managers of the Western Infirmary are not only prepared but desire to open a dispensary for skin diseases as a part thereof. That this would also be of advantage to the students there is no doubt. If this scheme is carried out the Glasgow Hospital for Skin Diseases will cease to exist as a separate institution. It is to be laid before the subscribers that a lectureship on dermatology should be founded in the University of Glasgow with £2500 of the hospital's funds, the free balance of the assets of the hospital thereafter to be handed over to the Western Infirmary for the endowment of beds in the wards appropriated to the treatment of skin disease. It is also suggested that the names of Sir Thomas McCall Anderson and Dr. A. B. Buchanan, the joint founders of the hospital, should be suitably associated with the scheme and that a record of the endowment of the beds should be placed on a tablet in the Western Infirmary. It is probable that this scheme will be endorsed by a meeting of subscribers shortly to be held. In that case the directors of the hospital will take steps to carry it into effect by means of a Provisional Order under the Private Legislation Procedure (Scotland) Act, 1899, to be promoted by them.

Extension of Aberdeen City Hospital.

A special meeting of the public health committee of the Aberdeen town council was held on Oct. 1st in order to consider the adoption of the plans of the city architect for the extension of the City Hospital. The committee approved of the plans with the exception of the proposed additional new pavilion for phthisical patients, the committee having not

yet decided as to whether such patients should be taken into the hospital or not. It was agreed to recommend to the town council that the remaining portion of the work should be proceeded with at once at the estimated approximate cost of £10,400.

Oct. 3rd.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Personal Cleanliness of Dairy Boys.

AN item of discussion which will, I trust, prove productive of good and palatable fruit in the near future has been again before the South Dublin district council. At a previous meeting some critical remarks had fallen from various members regarding the personal cosmetics and sanitation of city dairy boys, the publication of which elicited a resolution from the Dublin Cowkeepers' and Dairymen's Association that was communicated to the last meeting of the council by the secretary. It was as follows: "With reference to the statements of the rural district council of South Dublin, relative to the city dairy boys, we, who are employers of a large number of dairy boys in the city, hereby protest against the statements made as untrue and undeserved and in no way warranted, and we desire to point out that the boys are under the strict and constant supervision of officers of the public health department of the corporation." The opinions expressed by members during the discussion presented some divergence, though hardly so much as usual. Alderman Flanagan said that, notwithstanding the "resolution," "some of the dairy boys were not as clean or as tidy in their dress and persons as they ought to be." Mr. Landy said that "some of the dairy boys were exceptionally dirty. The council only objected to the dirty ones." And Mr. Curtis stated that he had been "subjected to abuse and insult from dairymen and boys for having dared to mention the matter at the council." The communication was marked "read." Most readers will probably agree, I believe, that the state of things referred to—and revealed in the speech last quoted—called for some critical scrutiny. And very many consumers of Dublin milk continue to hope and pray that the discussion may be repeated, even to the manifest production of very visible results!

Children's Hospital, Dublin.

What is known as "Pound day" was held recently in aid of St. Mary's Convalescent Home, Cappagh, Finglas, in connexion with the Children's Hospital, Temple-street, Dublin. The charitable having been previously requested to help by presenting a "*pound* of something" that may help to provide for the little patients, those who find the donation of a £1 note beyond their means can send a pound of tea, sugar, rice, biscuits, flour, fruit, soap, starch, candles, matches, or other useful commodity. Children's clothes, furniture, articles for the table, household utensils, &c., are also welcome. All donations are delivered from the principal shops free to the hospital. It was announced at a meeting of the committee that a letter containing 12 stamps had been received from a boy patient who had recently left the hospital after circumcision. Coming from a child it was greatly appreciated. Among the presents was a case of soap from the manager of a city laundry.

Boards of Guardians v. *Dispensary Medical Officers.*

It is a melancholy fact that the septuagenarian practitioner, Mr. S. McDermott, to the case of whose pension I recently referred in this column as a specimen of the gratitude of boards and councils, died before he had an opportunity of drawing the first instalment of the superannuation allowance which had been accorded to him by the Local Government Board, in spite of the determined opposition of the guardians of the union, to the poor of which he had devoted the best energies of his life during a whole generation. And another case of the characteristic generosity of our Irish boards of guardians has just been reported from Tralee: a motion to rescind the grant of his superannuation allowance to Mr. J. Hanifin was lost by but one vote—at a board meeting which included over 50 members. Still another specimen of the same type of feeling and conduct is reported from the Ballyshannon Union, where Mr. G. R. Corscadden has been medical officer (Ballintra Dispensary District) for nearly 30 years. Having been obliged to give up his residence and not being able to secure one in a convenient part of his district, he suggested the building of one to the guardians, which owing to cheapness of labour and material would not cost more than £500. He received a curt refusal and was told that he might take lodgings at Rossnowlagh, which is situated at a distance of eight miles from the centre of his district, and that such accommodation would serve well enough for his time! Verily, the life of the Irish dispensary medical officer is not a happy one.

Longevity in Donegal.

As might be expected from its very numerous contributions to the annals of longevity, the county of Donegal has taken up a conspicuous position in the relative number of its inhabitants who have presented claims under the Old Age Pensions Act. On Sept. 29th it was announced in the *Freeman's Journal* that 1200 forms of application had already been obtained from the Donegal head office and sub-offices. Some of these had possessed the legal age qualification more than 30 years ago. Charles Kelly of Burbane, in the parish of Inver, bases his claim on an age of 111 years; John McGinty, of the parish of Donegal, gives his age at 106; and Bryan O'Donnell of Tower, parish of Inver, at 108. Of the last-mentioned claimant it has been stated that he has always used the Irish language only, having never uttered a sentence of English during the whole of his long life! All three of the venerable applicants are described as being in good health, both physically and mentally.

Outbreak of Enteric Fever at Clontarf.

The suburban township of Clontarf has recently been visited by a rather widely spread epidemic of enteric fever. In the houses of one "road" no less than 34 cases have been reported. A large proportion of the patients are children and it is stated that the first case occurred in a school. The sanitary authorities are taking all possible precautions to prevent the spread of the fever. Sir Charles Cameron has written to the papers warning the residents in Clontarf to use disinfectants in the drains and to boil all milk before using; and this procedure was supplemented by warnings to the pupils in the various schools of the district to tell their parents of Sir Charles Cameron's advice. The outbreak appears to be so far confined to Clontarf; and the great majority of the cases have occurred in the roads running inland from the sea-shore. Of the explanations hitherto attempted, one is that the infection arose from the "sloblands," a sector of the indenting strand which has been cut off by the railway and is being gradually filled up to land level by the dumping of refuse. Another is that the making of new sewers has thrown up long buried soil of unwholesome properties; while yet another is the suggestion that the use of milk kept under cover during the unwonted temperature of the current heat-wave has led to the genesis of the mischief. In this connexion the following letter has appeared in the *Freeman's Journal* of Oct. 2nd:—

Public Health Committee, Municipal Buildings,
Dublin, 3rd October, 1908.

SIR,—I have received letters and visits of several persons relative to the sloblands at Fairview, now being filled in by street sweepings, &c. The epidemic of typhoid fever at Clontarf is attributed to emanations from these sloblands. May I state that none of the recent cases of typhoid fever have occurred amongst the people residing near the sloblands.—I am, Sir, your obedient servant,

CHARLES A. CAMERON, Medical Officer of Health.

The Belfast Abattoir.

The Belfast Corporation on Oct. 1st, at its monthly meeting, decided to authorise the erection of a new abattoir on the Stewart-street site at an estimated cost of £32,118, in accordance with plans passed by the city surveyor. There was a long and animated discussion and frequent amendments were suggested, but in the end the motion was carried by 31 votes to 12.

The Belfast Natural History and Philosophical Society.

Sir John Byers was on Oct. 2nd unanimously elected President of the Belfast Natural History and Philosophical Society for the session 1908–09.

The late Mr. David Wilson, L.R.C.P. Edin., M.R.C.S. Eng.

Deep regret will be felt by a numerous circle of friends and patients at the announcement of the death (after a lingering illness due to a paralytic seizure) of Mr. David Wilson who for many years practised in Whiteabbey,

adjacent to Belfast. For many years Mr. Wilson was a member of the Belfast board of guardians and he represented Whitehouse electoral division on the Belfast rural district council. A Licentiate of the Royal College of Physicians of Edinburgh (1865) and a Member of the Royal College of Surgeons of England (1865), Mr. Wilson practised at Whiteabbey, where he enjoyed the respect and confidence of a very large *clientèle* in the surrounding district.

Oct. 6th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Hygiene and Deep-Sea Fishermen.

WITH a view of improving the environment of deep-sea fishers both from a moral and hygienic point of view, the French Society of Hygiene has decided, on the initiative of its honorary president, to open a competition for the year 1909. The competition will be founded upon the results of an inquiry which is to be made into the dwelling places of deep-sea fishermen in a particular district. Candidates for the competition may choose their own district. Various prizes, including a gold medal, will be given. The competition will consist of two parts. The one will deal with statistics of the birth-rate, and with the death-rate and the disease incidence of preventable diseases. The other part of it will deal with the best description of the dwellings of the fishermen and with the expenses which would be incurred for really healthy dwellings, a proper water-supply, and adequate drainage, due notice, of course, being taken of existing conditions. Candidates will also be required to deal with the best way of ameliorating unhealthy conditions and of building new quarters for fishermen in the outskirts of maritime towns, especially in those which are fortified and therefore somewhat overcrowded.

The International Congress on Low Temperatures.

This congress was opened on Oct. 5th in the large theatre of the Sorbonne by M. Ruan, Minister of Agriculture, who delivered an address which was loudly acclaimed. The congress will last for a week.

Oct. 6th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Practical Value of the Opsonic Index.

Dr. Turban of Davos and Dr. Baer of Reiboldsgrün writing in a recent number of the *Münchener Medicinische Wochenschrift* gave a report on their experiences concerning the opsonic index of tuberculous patients. Since November, 1906, the opsonic index has been determined in 84 tuberculous and in six non-tuberculous patients, more than 1000 examinations being made. It was remarkable that the results were nearly constant during a long time, a fact which, according to the authors, is a proof of the accuracy of the method. In healthy people the index proved to be very near to 1·0, the limits being between 0·9 and 1·1. Of the tuberculous patients in general 16·6 had a normal index—viz., 31 per cent. of the patients in the first stage, 22 per cent. of the patients in the second stage, and 9 per cent. of the patients in the third stage. Of patients with fever 0 per cent. and without fever 30 per cent. had a normal index. The following deviations of the index were observed: 1. The index was constantly above or below the normal; this was especially the case in patients with or without fever showing symptoms of an "active" tuberculous process. An "active" process means not only progressive disease but also cases where clinical observation makes it likely that toxins from the tuberculous focus have been absorbed into the circulation. 2. The index showed wide variations; this was observed in feverish patients with rapidly progressing tuberculosis of the lungs, and in every case of tuberculosis of the bones, joints, and kidneys. 3. The index being in the beginning low rose later to the normal or nearly to the normal. In these cases an amelioration of the local process, an improvement of the general state, and an increase of weight were observed together with the rise of the index. 4. The index having been constant became suddenly very low. This happened when a recent process in the lungs such as pleurisy occurred and also in cases with very acute destruction of the lungs. Not every feverish case showed a deviation; there were cases with high fever and acute destruction where the index was constantly during a fortnight from 0·65 to 0·67. In these cases a mixed infection with staphylococci must be assumed to be present. A low index, 0·62 to 0·71, was observed in a case of syphilis of the lungs; in this case the opsonins proved to disappear by boiling at 60°, whilst in tuberculosis they only diminish by 50 to 75 per cent. From the above observations the importance of the opsonic index for diagnosis and prognosis becomes obvious. A normal index does not exclude the presence of tuberculosis, but that of a progressive process; a low or high index proves the presence of active tuberculosis; wide deviation proves the presence of a progressive process; a constant low index shows that the process has become stationary; a gradual rise of a low or varying index occurs together with an improvement; and a rapid fall with a deterioration. The observers pointed out that a repeated determination of the index within a long space of time is essential and that this fact is prejudicial to the use of the index in practice. The determination of the index is, however, valuable in initial cases, where an abnormal index would prove the presence of an active process and the necessity of treatment. Concerning the influence of tuberculin treatment, first a negative and then a positive phase of the index of 0·2–3·0 was observed. Even after the administration of only one-millionth of T.O.A. a marked negative and positive phase was obtained, and during the treatment wide variations occurred. The authors are of opinion that during the tuberculin treatment observation of the temperature and of the local reaction is more important than the determination of the opsonic index.

Measures against Cholera.

The prevalence of cholera in St. Petersburg has naturally been a subject of careful attention for the Prussian and German Governments. The big traffic between Russia and the neighbouring parts of this country makes it very likely that at least some cases of cholera will be conveyed here. Indeed, some days ago a case was reported of a Russian lady who had come with her husband to Berlin and showed symptoms of cholera. She was immediately conveyed to the cholera pavilion of the Virchow Hospital, whilst the husband and the servants were placed under observation in a pavilion for suspected cases. The case caused some nervousness in Berlin, but on microscopical examination it proved to be not cholera but enteric fever. Meanwhile a conference has taken place of the delegates of the different German and Prussian administrative departments, of the medical, railway, seaport, police, and other authorities. It was decided to abstain at first from quarantine measures but to examine the passengers of the Russian immigrant trains who in great number pass through Germany for Hamburg and Bremen and also passengers of vessels coming from Russia. Arrangements will be made for the conveyance of eventual cases of cholera and to keep special pavilions ready in the hospitals of the greater towns. The water of the rivers coming from Russia will be daily examined by bacteriologists on the frontier as to the presence of cholera baciill.

Poisoning by Raw Meat.

In the Virchow Hospital of Berlin recently 80 of the nurses suddenly became very ill with symptoms of poisoning. It was stated that the poisoning was due to spoiled meat which had been given to the nurses in a raw state for supper. Bacteriological examination showed the presence of paratyphoid bacilli. Fortunately no death occurred. Most of the nurses were able to return to work after one or two days and only a few had to be kept in bed for a week and to obtain leave because of great debility. The absence of so many nurses has of course caused some trouble in the nursing of the patients and nurses of other municipal hospitals and private nurses had to be fetched in haste to fill the vacant places to allow the service to continue. The event was discussed in the town council and the kitchen department of the hospital was severely criticised. The mayor stated that after an investigation of the matter it had been decided that raw meat would no longer be given either to the nurses or to the patients

Oct. 6th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Welcome and Unwelcome Invaders.

JUSTLY alarmed at the advance of Asiatic cholera Italy is taking every precaution to keep it at bay, and what with hygienic surveillance at the frontier and the seaports, supplemented by the enforcement of sanitary measures within her own household, she is sparing no effort to ward off the fell invader and to minimise what has hitherto been its most effective auxiliary—domestic panic. As to the first of these "lines of defence," which may be summed up in the word "quarantine," she is in no danger of lapsing into remissness; nay, the contrary is the fact, insomuch that she is apt to repeat her mistaken policy of previous visitations and in her anxiety to exclude the coming foe, cholera, to scare away the coming friend, the English-speaking visitor.

"Incidit in Scyllam cupiens vitare Charybdim";

and by vexatious conditions imposed on "arrivals" by railway train or steamship, she often, quite needlessly, shuts out an element, never unwelcome, the free-handed "stranger within her gates." As if indeed to correct the disposition in which the excessive zeal and harassing regulations at frontier or seaport originate, she is laudably employed in reassuring an all too emotional and ecstatic public as to the real nature of cholera and the best means of antagonising it; and so we are witnessing the opportune "Conferenza" and the well-timed popular lecture at which the voice of the profession is heard to salutary and inspiriting effect. In Rome the other day the medical authority of Dr. Santoliquido—a member of Parliament who is also officially responsible for the "Direzione Generale della Sanità Pubblica"—intervened at an assembly of health officers and railway functionaries to set before them the best means of preventing the propagation of the disease while sparing the travelling world every avoidable inconvenience; and to mention one provincial school out of many others—at Siena, Dr. Sclavo, of the University, gave wise counsel to the general public, first as to the nature of the disease, and next as to the readiest means of diagnosing it, isolating it, and treating it. As to the railway service, there will be started a train especially for the "emigrants" employed in labour abroad who are returning to their homes, a train which, besides having intercommunicating carriages, will have also a wagon in which there will be a completely equipped "stazione di disinfezione," with another wagon attached to it conveying the "personale sanitario," the "armadio farmaceutico," and a "sezione d'isolamento." The institution of these trains—to be started the moment the hygienic outlook seems to warrant it—is a new departure for Italy; and it will have its justification in contributing to exorcise that "spirit of panic" which has hitherto been so disastrous—notably in the terrible "explosion" of cholera just 24 years ago in Naples, where more died from sheer fright than from the actual disease. The institution may be taken as a typical example of the more scientifically inspired policy which animates Italy under the threat of plague, of cholera, or of other pestiferous visitants, reassuring her own public, while relieving the incoming stranger of the vexatious ordeal hitherto imposed on him at every arrival platform or landing quay.

Disease-conveying Banknotes.

Once and again the warning has sped throughout Italy as to the danger incurred by the handling of her "paper currency"—that is, of banknotes representing in value 10 francs or even 5 francs respectively. Things are not so bad in this respect as when "biglietti di banca" for 2 francs, 1 franc, and (*horresco referens!*) half a franc (5*d.*) were in free circulation, and when, especially in the case of the last named, the viscous dirt with which it was coated came to be recognised and dreaded as a potent vehicle of infective disease. Copper, nickel, and silver are now in use for sums below 5 francs (4*s.* 2*d.*); but still the 5-franc note is in universal currency and sometimes so filthy that the public, now awakened to the "septic touch," is increasingly reluctant to handle it. The 10-franc note is perhaps a shade less tainted with the sordes accumulated in transmission, but still it is accepted with misgiving by all but the ignorant or those whose necessity countervails considerations of health. The English-speaking traveller in Italy is now demanding with growing insistence from bankers and money-changers the metallic equivalents for these risky "assignats," and Italians are seconding him in his preference till, it is to be hoped, the Treasury will see its way to replacing its "carta-moneta" by the silver and the gold of a former, if not a better, day.

The Crusade against Malaria.

The Italian Prime Minister, His Excellency Signor Giolitti, has nominated a "commissione technica" to examine and to discuss the numerous data collected by the Minister of the Interior in the "Crusade against Malaria," after the enforcement of the laws enacted to antagonise the causes of the disease and particularly after the sale of State-provided quinine. The president of the commission will be the senator Dr. Guido Baccelli (who presides over the "Consiglio Superiore di Sanità"), assisted by Dr. Rocco Santoliquido, Professor Arnaldo Maggiora, Professor Alfonso di Vestea, and Professor Pietro Canalis. The secretary to the commission, an exceptionally strong one as will be seen, is the "medico provinciale," Dr. Mercanti.

Oct. 3rd.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Infant Mortality in Hungary.

THE vital statistics for last year show that although the general mortality has notably decreased that of infants has been hardly affected. It would seem that all the hygienic advances which have been made during past years, and which have proved so beneficial to the population at large, have hardly touched the fringe of infant mortality. Its magnitude depends upon alimentary disturbances, diarrhœa, too frequent feeding, and feeding with infected milk, &c. Experiments were made in Budapest with cow's milk from different suburbs, and it was found that dirt was invariably present, varying in amount from 1 to 72 milligrammes per litre. The first milkings always contain the most dirt, the amount of which decreases proportionally as the milking proceeds. From a hygienic standpoint it would be wise to discard the first milkings.

Operation for Mastoid Disease.

At the last meeting of the Budapest Royal Society of Physicians and Surgeons Dr. Fleischmann discussed the question of when to operate on the mastoid bone. He said that a review of the literature on this subject teaches us that suppuration of the middle ear, whether acute or chronic, involves danger to life. Further, that properly timed surgical intervention prevents the extension of the disease into the cranial cavity. The gravity of the disease depends solely on its locality. If the suppuration affects the middle ear or the cranial cavity then serious danger arises. In such cases operation is almost inevitable. The operation itself is not a dangerous one. The mortality of simple opening of the mastoid process varies, according to recent authorities, between 1 and 4 per cent. The radical mastoid operation is generally attended by about 8 per cent. mortality. In his (Dr. Fleischmann's) cases 12 simple operations (opening into the mastoid) resulted in one death. A study of the course of an acute mastoiditis without any operative interference affords a good idea of the indications for operation. The chief of these are as follows: 1. Extension of the disease into the cranial cavity characterised by persistent one-sided headache or any cerebral symptoms. 2. If mastoiditis be present, characteristic signs of which are pain and tenderness, over three or four days, immediate operation is to be resorted to. 3. When the discharge of acute otitis with mastoid symptoms does not diminish at all in the course of about two weeks of appropriate treatment chronicity must be expected, even though the mastoid signs diminish. Hence an operation is advisable.

An Adjuvant to the Finsen Light Treatment.

Dr. Morvay reports some interesting experiments in connexion with eosin stains as an adjuvant to the Finsen light. He has found that the addition of a very small amount of erythrosin to the culture media of bacteria caused a very much greater sensitiveness on their part to the yellow and green rays which were otherwise ineffective. The action

may take place through a thick layer of skin and he recommended the injection of sterile solutions of this fluid by the Schleich method in order to render the deeper tissues accessible to the Finsen rays. Dr. Morvay has lately made a clinical trial of this method. He has treated 25 cases of lupus, scrofuloderma, tuberculous lymph glands, and skin cancer. A solution (0·1 to 1 per cent.) of erythrosin in sterile salt solution was injected as deeply as was necessary for the effect desired. In from two to five hours later the Finsen light was applied for from 15 to 20 minutes, or longer in the case of carcinoma. His experience fully confirms the claims made by Dreyer that in this manner the Finsen rays may be made to penetrate depths never before reached.

The Treatment of Chronic Interstitial Nephritis.

Dr. Révész of Nagyvárad has studied the effect of various measures upon chronic interstitial nephritis by the quantitative estimation of albumin and of the blood pressure. He came to the following conclusions. Warmth and carbonated baths diminish both albumin and blood pressure. The same holds true for rest in bed and inhalations of amyl nitrite. Exercise, especially climbing mountains, seems to have a very favourable influence; in normal individuals the pressure rises greatly, but in those afflicted with Bright's disease there is considerable dilatation of the vessels. The best results were obtained if the patients were allowed to exercise in the forenoon. Since albuminuria and increased arterial tension go hand in hand it is likely that interstitial nephritis is directly due to a narrowing of the afferent vessels of the kidney. Neurasthenia constitutes an important etiological factor and it would be a great mistake to condemn patients to muscular inactivity simply because they have a little serum albumin in their urine.

Sept. 29th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

An Institute Hospital.

THIS unique hospital is to be attached to the Rockefeller Institute for Medical Research in the city of New York. It will be devoted neither to charity nor to profit but solely to the advancement of the medical sciences. The primary object of the hospital is not the cure of the individual patient but to determine accurately the nature of certain features of his disease hitherto unknown. The incurable class and those suffering from new forms of disease will be preferred. It is proposed even to pay certain patients, suffering from diseases not well understood, for their attendance and submission to investigation. There will at times be a class of patients representing every phase of a disease, as cancer, tuberculosis, and pneumonia, in order that the conditions on which its progress depends may be studied with the most minute precision. The treatment, I am informed, will not be orthodox, that is, in accordance with rules now established in hospital practice, but will be governed by new truths disclosed, the object of this research being to discover new and more successful methods of combating disease. While old methods of treatment will necessarily be tested and their value accurately determined the real purpose of the investigators will be that of explorers—viz., to discover new facts on which will be based radical reforms in treatment. The cost of the structure will be $400,000. It will be an eight-storey building, with three floors of wards and a total capacity of 36 beds, and 12 single rooms reserved for individual maladies. Laboratories equipped for every kind of investigation will be provided. Professor Rufus I. Cole, of Johns Hopkins University, will be the head of the new hospital.

Oysters Guaranteed by the Board of Health.

Enteric fever from oysters containing the typhoid germs derived from the polluted waters where they are "fattened" for market has become so frequent that a new section has been added to the Sanitary Code of New York City. This section provides that oysters which have been "fattened" in polluted waters cannot be sold in the city; they must be brought direct from the ocean. The new law requires that every person who sells oysters in New York must have a written permit from the Board of Health. All applicants are required to give the names of the growers from whom they buy their stock and the location of the beds. The permits are revocable on proof that a dealer is selling "drinked oysters," as the dealers call oysters fattened in polluted waters. The adoption of this ordinance was the result of an inspection by officials of the Health Department of all the oyster beds situated between New Haven and New York and along the New Jersey coast. So frequently have outbreaks of enteric fever been traced to oysters that the people of the city had ceased to use them freely.

Popular Lectures on Tuberculosis by the Phonograph.

At each of the county fairs held during the autumn in the State of New York the State Charities Aid Association placed a tuberculosis exhibition together with a large talking machine to be used in connexion with the exhibition. The people hear a voice telling them that in this country 400 lives are daily sacrificed to the "Great White Plague" and that most of these deaths are entirely unnecessary; it explains in detail how the disease spreads and how it may be prevented; it teaches the value of fresh air and the necessity of ventilation and sunshine in every room in the home; and cleanliness and how to secure it are enforced with ample illustrations. The educational results of this simple method of instructing the common people have amply justified the innovation.

Conference on the Bubonic Plague.

The bubonic plague has become a well-grounded source of anxiety to the cities of the Pacific coast. San Francisco has for more than two years struggled to exterminate it but in vain. That prevention is safer, easier, and more economical than cure has been abundantly demonstrated in the experience of that city. Impressed by its example the health authority of the city of Tacoma, of the State of Washington, has issued invitations to all the health officers of the Pacific coast cities to attend a conference in Tacoma for a discussion of the plague and of the means of combating it. A number of health officers have signified their approval of the conference and their intention to attend.

The Fourth of July Celebrations: List of Injuries.

The *Journal of the American Medical Association* has published its sixth annual compilation of statistics of injuries occurring in the celebration of the Fourth of July in the United States. The total number was 5623. This is the largest number of injuries since the collection was first made in 1903. The total number of injuries for the six years under review is 29,296. Blank cartridges caused by far the larger number of injuries. The number of deaths was 163 in 1908 and 1316 for the six years. The fatality of the injuries has been reduced from 466 in 1903 to 163 in 1908, though the total number of injuries has been increased during that period from 4449 to 5623. The diminished fatality of these holiday injuries is probably due to the use of less dangerous explosives. The most interesting feature of these injuries is the complication of tetanus in the treatment of the wounds. There were 76 cases of tetanus this year, or three more than last year, but 13 less than in 1906. Since 1903 there has been a constant decrease until this year and this decrease of tetanus has kept pace with the decrease of cases of injury from blank cartridges. The usual site of injury in cases of tetanus was the hand and the blank cartridge was generally the weapon which inflicted the wound. Substitute and restrictive measures are now being adopted in the different States. Many cities limit the number and restrict the kinds of explosives, others limit the time of celebration, while a few prohibit fireworks except by officials. The annual publication of these statistics by which the public becomes informed of the dangers of what has been regarded as a harmless celebration of a national holiday will doubtless result in the prohibition of dangerous explosives and the substitution of harmless and more diverting methods of enjoyment.

Association of National Food and Dairy Departments.

One of the greatest defects in the operation of the "National Pure Food Law" is the want of coöperation of the national and the State authorities. The national and State standards differ and there is that lack of harmony which tends to neutralise the laws in their practical application, both national and State. The aim and purpose of the association are to secure such uniformity of requirements and interpretation as will furnish to the consuming public of every State alike ample and sufficient protection from fraud

in, and adulteration of, food products. To this end the association appointed a committee to prepare a Bill founded upon the determinations of the Joint Standards Committee and which shall be formulated with a view towards uniform requirements throughout the several States. In the dual form of Government in this country laws adopted by the Federal Government can affect only articles of interstate commerce and therefore the real regulation of foodstuffs must eventually rest with the various States. The effort of the association to secure uniform and effective State legislation is on that account of the first importance and highly commendable.

Resignation of Dr. William P. Spratling, Superintendent of the Craig Colony for Epileptics.

The Craig Colony for Epileptics is about to suffer a severe loss by the retirement of its superintendent, Dr. William P. Spratling, who has accepted a position as professor of physiology in a medical college in Baltimore. Dr. Spratling has been the superintendent of the epileptic colony since its organisation and to him is due the credit of the success of this institution. He brought to its management a mind thoroughly equipped for the peculiar service which was required for success and a temperament adapted to meet patiently, but aggressively, the many obstacles which such a new and untried institution has to encounter in its early history. He has the satisfaction of seeing the colony finally established on a permanent basis.

Sept. 24th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Defective Eyesight amongst Parsis.

IN his special investigation into the condition of the eyesight of Parsi students and school children during the past year Dr. K. N. Karanjia, the honorary surgeon of the Ardisir Hormarji Wadia Parsi Ophthalmic Hospital, finds that defective vision is alarmingly prevalent among them. The most unobservant person in taking a walk in Bombay cannot but be struck by the number of young Parsis decorated with spectacles, but Dr. Karanjia says that these represent only a fraction of the defective sight which actually exists. The majority of those who need glasses, he says, cannot obtain them for want of money or go without through neglect, to the further injury of their eyes, resulting in pain and a handicap through life, and he appeals for funds to supply poor Parsis with spectacles free of charge. While this cause deserves a general response it is much more necessary to take steps to prevent the further injury of the eyes of the young. The Germans are a notoriously short-sighted people since they took to education owing chiefly to the illegible character of their language, and it is probable that the bad printing and small type used in Gujarati primers are also responsible for like troubles among the Parsis. More probably, however, the trouble is often caused by the learning of English from types insufficiently large a little later in school life. At whatever age the learning of a language is begun it should be prosecuted at first by means of the big type made for little children, for the strain on even an adult eye of reading unfamiliar characters is many times greater than that of reading characters of the same size which have grown familiar. Intelligently conducted ophthalmic tests should be made of the Gujarati characters, and if found injurious in their present form they should be modified, printed big, or abolished altogether.

Veterinary Work in the Central Provinces.

From the annual report on the veterinary department of the Central Provinces we learn that the conversion of the people in favour of the inoculation of their cattle against rinderpest has been in some places most striking. Pending the introduction of a new scheme in 1909 a small staff of veterinary assistants, paid from provincial funds, has been appointed. These have been generally employed on inoculation and to them are largely due a marked increase in the number of inoculations and the department's growing popularity with the people. Hitherto inadequate recruitment has been one of the main obstacles to advance, and the closing of the Ajmere Veterinary School and of the two years' class at the Bombay College has increased this difficulty. With the provincialisation of the department which the new scheme involves the scale of pay of veterinary assistants will also be raised, and it is hoped that the improvement in prospects will attract more candidates of a suitable class. Of course, the activities of the department are by no means confined to isolation work. Cattle-breeding farms have been established and bulls are distributed to stock-owners with the object of improving local breeds of cattle. This latter measure has not been so successful as anticipated and the question of altering the system is under consideration.

Central Provinces Medical Department.

The scarcity of hospital assistants seems to be one of the principal difficulties in connexion with the carrying on of Government charitable dispensaries of the Central Provinces and Berar. New dispensaries have been opened and continue to be opened, but more hospital assistants are urgently needed. The value of medical scholarships was raised in 1905, but still considerable difficulties are experienced in obtaining a sufficient number of candidates for the hospital assistant service. Possibly the difficulty will be obviated when the Government of India has decided what to do in regard to the improvement of the pay and prospects of hospital assistants, a subject which is at present under its consideration. The number of patients attending the hospitals is increasing, but not in proportion to the large number of new dispensaries opened. This is attributed to the prevalence of plague, which deterred people from resorting freely to dispensaries, though the feeling against attendance at dispensaries during the epidemic of plague is said to be nothing like as strong as it used to be a few years ago. Of the principal diseases treated malarial fevers head the list, but there is an appreciable decrease in the number of these cases. An ominous feature during the last three years has been the growing number of tuberculosis cases for treatment and it is feared that this disease is becoming more prevalent. A pleasing illustration of the warm regard felt by old officers of the provinces for the people among whom they have worked is afforded by Brigade-Surgeon Law and Mr. W. Brittain Jones, a former chief commissioner of the Central Provinces, having sent donations of Rs.10,000 and Rs.5000 respectively for the dispensaries. It is regarded as disappointing, however, that the contributions to dispensaries generally have not increased proportionately to the rapid growth in the material prosperity of the provinces.

Suggestions for Sanitary Reform.

Sir John Hewett has taken up the question of sanitary reform for Allahabad, Cawnpore, and Lucknow, and called attention to the high infantile and fever mortality in the United Provinces. It is high time for the educated classes, zamindars and other rich people, to come forward and assist the Government in its endeavours. A Sanitary Association might, for example, be formed at Allahabad on the lines adopted at Bombay. Before this is done local medical practitioners, Government surgeons, and assistant surgeons will have to begin to give lectures on sanitation and hygiene in English and Hindustani on subjects such as care and management of infants, causes, prevention, and cure for fevers, plague, and so on. Societies for the prevention of infantile mortality might also be formed in connexion with the Sanitary Association, and its accounts kept separate for supplying good milk to the infants of the poorer classes free or at moderate cost. The municipalities of Lucknow, Cawnpore, and Allahabad, with the assistance of the rich public, ought to set up shops for supplying good milk free to poor infants first where mortality is highest, and then for the general public, if they desire it, at the usual rates. Ladies ought to come forward to assist their poor Indian sisters by visiting their houses and teaching them how to take care of infants, and giving them good milk free or at very moderate cost. They could also teach the principles of sanitation in their own language to an assembly of ladies. As regards fever, it is suggested that a fever fund should be started. Arrangements might be made at the village post office, or with the head man of a village, to sell a packet of five grains of quinine at one price (½ anna) as in done in other presidencies; a machine for making tablets might be ordered and quinine powder and quinine tablets given free to the poor in cities and villages. The rich

public, the *Raises*, the Rajahs, and the Nawabs have many such philanthropic works to do for their poor brethren. It would have been better if the missionaries had preached the doctrine of sanitation with Christianity from the very outset. Urdu and Hindu papers ought to take up these subjects at least once or twice a month, either from English books or newspapers, to enlighten the general masses on these important subjects. The ryot and the *rais* ought to know that the labour and health of the poor are the wealth of the ryot.

Medical Relief in the Punjab.

In a Government resolution on the triennial report on the working of charitable dispensaries of the Punjab, it is mentioned that the Lieutenant-Governor has expressed the opinion that a large share of the financial resources of the province should in future be devoted to medical relief even, if necessary, at the expense of checking somewhat the rate of the progressive expenditure on higher education. If increased expenditure on any department is feasible the medical department is to have the first claim, but while saying this his honour does not fail to mention the desirability of private subscriptions being forthcoming. The citizens of certain districts have shown admirable public spirit in contributing to their hospitals, and now that arrangements have been made for enabling subscribers to earmark their subscriptions for particular objects and particular dispensaries each subscriber will be able to see for himself the good that he is doing for his fellow men, and it may be that the personal pride in an institution which he has helped to develop will open the purse-strings of many who have hesitated to give what has hitherto been really a mere donation to the funds of the district board, a body to which no particular sentiment can attach. The number of hospitals and dispensaries in the Punjab is steadily increasing, and they now total 425 as compared with 37 at the end of the last triennium, but there are plenty of districts where patients must travel long distances before they can obtain treatment. The number of in-patients is growing but it is thought that if all the dispensaries had beds for their patients and the hospital assistants were always popular with the people, the practice of indoor treatment would increase enormously. There were 3,750,000 of outdoor patients, which means a general increase on the previous three years, and evidently the system of medical relief is growing steadily in the confidence of the people. But though these public institutions can do so much, it is recognised that local bodies will never be able to provide medical assistance at every man's door, and it is hoped that unofficial doctors will step in and fill up the gaps. They will, it is anticipated, at first need protection against the charitable competition of public dispensaries, to which even the well-to-do resort unfairly for gratuitous medical relief, and still more a sympathetic backing from Government officials as a support to their prestige and reputation; but given this assistance there can be little doubt that the future extension of medical practice in rural tracts must be largely in the hands of the private practitioners.

Births and Deaths in Eastern Bengal.

It is difficult to assign any definite cause for a steady and continuous fall in the birth-rate over a large area, such, for example, as is recorded for 10 out of 14 districts in Eastern Bengal during the past year, and which was noticed in 1906, remarks a contemporary. The decrease during the past two years has been most pronounced in the Backergunj, Dinajpur, Tipperah, Mymensingh, and Dacca districts. In Rungpur and Malda alone has the birth-rate been steady, while in only two districts, Chittagong and Jalpaiguri, has there been any marked rise. "It is impossible to say," writes the Sanitary Commissioner, "what the significance of this fall in the birth-rate may be; but it is interesting to note that Chittagong and Jalpaiguri are the two districts which have been least affected by scarcity. There is no evidence that it is due to any widespread defect in reporting." The death-rate in Eastern Bengal last year fell from 31·67 in 1906 to 29·30 per 1000, the past year, on the whole, having been a healthy one.

Surgical Equipment in the United Province Hospitals.

One of the directions in which increased efficiency is especially noticeable in the medical department of the United Provinces is in connexion with the surgical operations. Colonel R. D. Murray, I.M.S., Inspector-General of Civil Hospitals in the United Provinces, remarks that the advance in the number of operations combined with the increase in the number of patients cured by them is a matter of congratulation. He proceeds: "It is due in large measures not only to the increasing confidence of the people and to the extended scope which medical officers enjoy under modern surgical procedure but also to the stimulus which has been given to operative work by the improvement to operating rooms and surgical equipment during the past few years. My predecessor, Colonel Joubert, commenced a campaign against obsolete instruments and obsolete methods which is now beginning to bear fruit, and I have done my best to continue the good work by building new operating rooms and removing defects from old ones wherever it has been possible. There is hardly an operating room in these provinces which has not been either rebuilt or remodelled during the past three years, or for which structural alterations have not been proposed. My work in this direction has unfortunately been stopped temporarily by the necessities of the existing famine, and all projects are in abeyance. Operations are now possible in our larger hospitals which a few years ago were not undertaken at all or, if so, with the greatest apprehension. The triumphs of modern surgery can only be achieved by attention to that complete asepsis which can alone insure success and which was impossible under the old conditions. Not only civil surgeons but assistant surgeons undertake formidable abdominal and other operations with success which formerly were precluded on account of the dirty surroundings under which they had to be performed."

Sept. 15th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Ambulance Lectures.

MANY of the medical men here have felt lately that the giving of lectures on first aid and ambulance work should be paid either by the local authorities or by the Government. Some discussion has taken place in the newspapers on this point. It has not been suggested that lectures to the general public should be paid for, but that whenever police, tramway officials, and so on, have to be instructed some monetary recompense should be made to the medical instructors. There is a considerable measure of justice in the request. Many employers, steamship companies, railways, mines, and the like, require that anyone seeking admission to their services must give evidence of a knowledge of first aid. There would seem to be no just reason that medical men should supply this education free of charge.

Sanitary Corps.

Following the example of our Eastern teachers the Defence Council here, on the suggestion of Surgeon-General Skerman and the Hon. Colonel Collins, set up a sanitary branch of our little army. The chief health officer (Dr. J. M. Mason) at the request of the council delivered a series of lectures on military hygiene, which were well attended, not only by the medical staff, but by the combatant branch of the service. A schedule has been issued with new regulations which have been adopted by the Defence Council with respect to the New Zealand Medical Corps, which deals *inter alia* with the sanitary branch of the service. The chief sanitary officer is attached to the Surgeon-General's staff and his duty will be to see that proper provision is made so that the principal medical officers in their several districts will have at their disposal sanitary experts who will advise them as to the best site for camps, the sanitary condition of our forts, water-supply, &c. Dr. Mason has been appointed chief sanitary officer with the rank of lieutenant-colonel. Attached to the health department are a large number of specially qualified experts, and the idea is to utilise their knowledge in military matters as well as in that which concerns the health of the general community.

Appointment of Mr. J. A. Gilruth.

To the great regret of all who value original research Mr. J. A. Gilruth, M.R.C.V.S., has been induced to leave this country for fresh work in Victoria. For long Mr.

Gilruth has been recognised here as one of our leading pathologists. He has for several years been head of the veterinary branch of the Agricultural Department, and the high state of efficiency of that service is entirely due to him. In New Zealand we have a system of meat inspection which could not be bettered. Every shoulder of mutton, every frozen kidney, every pound of boned meat is marked with the stamp of a qualified veterinary surgeon. This has been his work and his alone. In addition to this he has made many original observations on cancer, Pictet disease in horses, and blackleg in cattle. He has, since the inception of the Health Department, acted as pathologist and has rendered most valuable help with respect to those diseases which are common to man and the lower animals. Without doubt New Zealand is losing one of its most accomplished experts in bacteriology and microscopy. He has been appointed professor of animal pathology at the University of Melbourne at a salary which it has been stated is the highest ever paid to a veterinary surgeon.

Visit of the American Fleet.

The visit of the "Great White Fleet" to the beautiful harbour of Auckland has been of interest to the medical profession as to all classes of the community. Never has there been seen in British waters south of the Line such an array of battleships. With splendid precision stately engines of war steamed into the famed Waitemata ("waters of peace"). Though they had met with storm and stress on their journey from Tutuila, the 16 great battleships steamed to their anchorage and dropped anchor each within ten feet of its allotted space. Here, while we have a "local option" sort of Contagious Diseases Act, syphilis bars a person from oversea from landing, and the chief health officer was instructed to board the flagship and lay this, among other matters, before the fleet surgeon of the American Squadron. New Zealand, being the first British point of land that the Fleet touched, naturally wished to further its convenience in every way, and so arrangements were made whereby the hospital statements from the various ships were sent on board the flagship and examined by the chief health officer and Mr. E. W. Sharman, the port health officer of Auckland. There have been singularly little sickness and few accidents during the long cruise. The hospital ship was of especial interest. For the first time in the history of any navy a medical man was captain, and well and worthily did Surgeon Stokes fill that position. You may remember that much disturbance was occasioned in the purely combatant branch when it was suggested that the hospital ship should be commanded by a surgeon. The experiment has been amply justified. Everything has gone smoothly and the work done has been of the highest order. A hospital ship must hereafter be a certain part of a fleet which goes far from home waters. One instance will suffice to show its usefulness. An outbreak of diphtheria took place on the *Nebraska*. Within three days swabs had been taken from the throats of the 1200 occupants of that ship, and as a result of the microscopical examination 62 men were transferred to the hospital ship and the outbreak was stopped right away. The dollar which America handed over to Miss Gould for this splendidly equipped ship was undoubtedly well spent, and in this truly the "Great White Fleet" has taught us a lesson.—One of the most pleasing of the many functions held in honour of our American *confrères* was the supper given by the Auckland branch of the British Medical Association, under the presidency of Dr. H. M. Inglis. The utmost goodfellowship prevailed and by general consent Dr. W. C. W. McDowell's admirable treatment of the toast of the evening formed without doubt one of the finest speeches of the week. In proposing the health of Fleet-Surgeon Curtis and the other medical officers of the Fleet, he called special attention to the great preventive work in tropical medicine in which naval surgeons had of late years borne so prominent a part. He paid a full tribute to some of the great names in American surgery and wound up with an eloquent peroration in which he said:—

> Last Sunday morning the Union Jack and the Stars and Stripes floated side by side to welcome the Fleet's arrival, but now, at the close of the week, after such happy intimacy, we realise that the officers and men of the American Navy have drawn the flags nearer together; yea, have, indeed, succeeded in entwining them together into a fair and firm "sailor's knot."
>
> I now call upon you to charge your glasses and drink to the health of the surgeons of the Fleet, the pioneers in this good work, and let us also toast to the dawning of the day when, with a fuller knowledge and a freer intercourse, the "sailor's knot" will be transformed into a "true lover's knot" a fit symbol of the relations between the two branches of the Anglo-Saxon race, a mighty duality in unity, a power making for liberty, equity, and fraternity among the nations of the earth.

Never was the force of the Indian proverb, as Kipling has given it to us, more aptly illustrated than on that evening: "I met an hundred men on the road to Delhi and everyone was a brother."

August 21st.

Obituary.

SIR ARTHUR VERNON MACAN, M.B., M.CH. DUB., F.R.C.P. IREL.,

KING'S PROFESSOR OF MIDWIFERY, TRINITY COLLEGE, DUBLIN, ETC.

THE death of Sir Arthur Vernon Macan, which took place on Sept. 26th, at his residence, 53, Merrion-square, Dublin, has deprived the Irish metropolis of one of its prominent practitioners. The deceased gentleman was the eldest son of the Hon. John Macan, Q.C., who was for many years a judge in the Irish Court of Bankruptcy; and he was born in Dublin in 1843, so that he had reached the age of 65 years. He received his collegiate education at the University of Dublin, in which institution he passed through a distinguished academic career and graduated in 1868. Having chosen medicine as a profession and selected, almost from the onset, the specialty of obstetric surgery and gynæcology in which he came in time to play so active and distinguished a part, he took the diploma of the Rotunda Hospital at an early stage; and after having obtained the University degrees of M.B. and M.Ch. at his *alma mater*, he proceeded to perfect his post-graduate studies at Berlin and Vienna. He was so far favoured by professional fate as to enter the portals of the healing art at the precise period at which the epoch-marking Listerian revolution was beginning to work out its great reformation in surgical practice. He always retained his close association with the great Rotunda maternity, and when he returned to its wards as assistant master, and afterwards as master, it was in the way of auspicious approach on the crest of the wave of the antiseptic movement. He enjoyed the unique privilege of leading the anti-microbic crusade into the greatest lying-in institution of the British Empire; and it need hardly be added that the triumph of a campaign which was necessarily and inevitably successful secured the name and fame of Dr. Macan for the whole of his subsequent professional career. His great physical activity enabled him to carry out an amount of muscular and mental exertion which would have overtaxed the resources of most. And his emphatic force of character proved an effective mainspring in all his professional and social movements. Thus he was enabled to face and to overcome direct opposition and collateral obstruction to movements of reform with less waste of valuable time (and diplomatic courtesy) than would have been found necessary or thought desirable by organisers of less natural vigour. Dr. Macan was elected a Fellow of the Royal College of Physicians of Ireland in 1877 and became the President of that institution in 1902–04. Dr. Macan's Mastership of the Rotunda Hospital constituted—in its usual septennial course—a genuine triumphal progress of professional practice; by the establishment of the inestimable boons of antiseptic cure and aseptic prevention in his special departments of obstetrics and gynæcology the horrors of puerperal sepsis were once and for all "laid" under his *régime*, in the great maternity of the Irish metropolis; and there are but few items of the history of the profession—or, indeed, of the human race—which better deserve the most grateful recognition of contemporaries and of posterity.

The late Sir Arthur Macan enjoyed not only a prominent career as a practitioner and pioneer of applied science, but also as a hospital and lecture-room teacher. He lectured on midwifery and obstetrics for a number of years at the Carmichael School of Medicine, from which he passed to the corresponding chair in the University of Dublin. This latter position carried with it appointment to the staff of Sir Patrick Dun's Hospital, to which institution he thus became obstetric physician and gynæcologist. The prominence of his professional position and the solid value of his contributions to professional knowledge led to the successive receipts of other testimonials of the recognition of his brethren, such as the presidency of the

Obstetrical Section of the Royal Academy of Medicine in Ireland, the presidency of the British Gynæcological Society, and the presidency of the Obstetrical Section of the International Medical Congress—on the occasion of the triennial meeting at Berlin in 1890. His grasp, mental and moral, as a lecturer and teacher as well as practitioner and administrator, was characterised by the emphatic stamp of his physical vigour.

Sir Arthur Macan's death has left a conspicuous blank in the phalanx of Irish gynæcologists and is universally deplored. His remarkable physique had been showing signs of failure for some months and decline of cardiac vigour hastened the end. His valuable published contributions include papers on his specialty in the *Transactions of the Royal Academy of Medicine in Ireland* and other professional periodicals. He also translated the "Intestinal Parasites" of Professor Heller.

ROBERT NIVEN, M.D., CH.B. GLASG., D.P.H. CAMB.

Dr. Robert Niven, medical superintendent of the West Ham Infirmary, Whipps Cross, Leytonstone, died there on Wednesday, Sept. 23rd, at the early age of 32 years. Dr. Niven had held the position of superintendent for just 12 months. He received his medical education at the University of Glasgow, where he graduated M.B., Ch.B. (commend.) in 1898 and M.D. in 1905. Immediately after graduation he was appointed junior house surgeon to the West Ham and East London Hospital, in due course becoming senior house surgeon there. He next went to Bethnall House Lunatic Asylum, where, in addition to obtaining lunacy experience, he worked at the London Hospital for the D.P.H. Camb., which he took in 1901. His next appointment was that of assistant medical officer at the South-Western Fever Hospital, Stockwell. During the late small-pox epidemic he went to Gore Farm Hospital where his devotion to duty was recognised by the Metropolitan Asylums Board by a special letter of thanks and an honorarium. Afterwards he obtained the appointment of senior assistant medical officer at the Camberwell Infirmary which he held till he went to West Ham a year ago. At West Ham Infirmary, where matters had been in a somewhat unsettled state for some time, his firm discipline and excellent administrative ability soon showed themselves and he displayed great energy in carrying out the duties of his responsible position. Among other things he undertook the reorganisation of the nursing staff and proved a strict disciplinarian, upholding the rules of the institution to the letter. Unfortunately his health broke down soon after he entered on his duties and he had to go first to the King's Sanatorium and afterwards to Switzerland suffering from a tuberculous affection of the right lung. At the end of three months he came back very much improved in health and took up his duties with renewed zest. The lung trouble had become quiescent, but unfortunately about a fortnight ago he developed influenza and an attack of croupous pneumonia supervened which terminated a useful and promising career. Dr. Niven will be greatly missed.

ALFRED CHARLES FESTING SMITH, L.R.C.P. & S. EDIN., L.F.P.S. GLASG.,

MEDICAL OFFICER IN CHARGE OF TROOPS, BULL POINT, DEVONPORT.

Mr. A. C. Festing Smith died suddenly at St. Budeaux (Cornwall) on Sept. 25th, from syncope, whilst visiting a patient. The deceased, who was in his fortieth year, was the younger son of the late Commander G. T. C. Smith, R.N., of Rathmullen, Ireland. He received his medical education at Queen's College, Cork, and qualified L.R.C.P. & S. Edin. and L.F.P.S. Glasg. in 1891. After holding a resident appointment at the Royal Albert Hospital, Devonport, Mr. Smith, about 12 years ago, commenced practice at St. Budeaux when he soon became highly popular. He was surgeon in charge of the troops at Bull Point, Devonport. Mr. Smith was formerly an alderman of the Devonport town council but had recently resigned the office. He had been overworked lately and this year had not been able to have his usual summer holiday. He married the eldest daughter of Lord Kinsale, who, with three children, is left to mourn his death.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Salomon Neumann of Berlin, at the age of 88. He was born in Pyritz and studied medicine in Halle, where he was one of Professor Peter Krukenberg's most distinguished pupils. He collected medical statistics and wrote numerous papers on sanitary subjects which attracted the attention of the civic authorities in Berlin where he practised so that he was appointed a member of the city council and this post gave him abundant opportunities of continuing his statistical and other researches. He did not give up his work until some 13 years ago when advancing age compelled him to retire. For many years he worked in conjunction with Professor Rudolf Virchow, the two being great personal friends.—Dr. Julius Laudenbach, professor of pharmacology in the University of Kieff.—Dr. Edouard Rondot, formerly *agrégé* in the University of Bordeaux and medical officer to the hospitals of that city.—Dr. B. Florschütz of Wiesbaden, the eminent archæologist, at the age of 70 years.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the first professional examination of the Conjoint Examining Board, held on Sept. 29th and 30th and Oct. 1st and 2nd, the following gentlemen were approved in the subjects indicated below:—

Chemistry and Physics.—John Vere Orlebar Andrew, Brighton Technical College; Fritz Ernest Bendix, West Ham Municipal Technical Institute; Frank Rex Fletcher, London Hospital; Frank Cane Godding, Guy's Hospital; Ralph Jones, Charing Cross Hospital; Charles Virgil Nunez Lyne, Birkbeck College; Percy Uvedale Mawer and Frederick Meinertzhagen, St. Bartholomew's Hospital; Frank Andrew Miller Nelson, London Hospital; Aly Heidar Taymour, Cairo and Guy's Hospital; and Clement Arthur Webster, Manchester University.

Chemistry.—Stephen Leonard Baker, London Hospital; John Henry Bennett, St. George's Hospital; Cyril Amand Bernard, Liverpool University; Bertram James Brewitt, St. Bartholemew's Hospital; Sydney Hudson Keys, Birkbeck College; Claude Kingston, University College, Bristol; William Arthur Rail, Melbourne University and St. Bartholomew's Hospital; and George Sydney Stathers, Cambridge University and University College Hospital.

Physics.—Robert Graham Brown, London Hospital; Arthur Geoffrey Morris, University College, Bristol; William Morris and Henry Barton Owens, London Hospital; Frederic Simpson, Charing Cross Hospital; and Lindsay Clive Smith, London Hospital.

Biology.—Robert Graham Brown and John Lyon, London Hospital; Horace Mather, Guy's Hospitals; Arthur Wellington Matthew and Henry Felix Mullan, London Hospital; John Hunter Pugh, Guy's Hospital; Philip Pennefather Warren, London Hospital; and Gerald Charles Wright, London Hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the Preliminary Science Examination for the Licence in Dental Surgery of the Royal College of Surgeons of England the following gentlemen were approved in the subjects indicated:—

Chemistry and Physics.—Leslie Miller, Charing Cross Hospital Thomas Dickson Muirhead, Birkbeck College; and Richard Reginald Steele, Bradford Technical College.

Chemistry.—Sidney Roland Bacon, Charing Cross Hospital; Chandulal Manilal Desai, Guy's Hospital; Denis Foster Lewis, Birmingham University; Frederic Winbolt Lewis, Middlesex Hospital; and Whalley Seath Stranack, University College Hospital.

Physics.—John Eric Rhys Evans, Guy's Hospital; Carl Joseph Oldham Jensen, Charing Cross Hospital; Richard Angwin Rail, South African College, Cape Town; and John Fitzgerald Williamson, Charing Cross Hospital.

THE LONDON MEDICAL EXHIBITION.—Proof of the interest taken by the members of the medical profession in this annual exhibition is furnished by the increased attendances shown year by year. The fourth meeting was held under excellent auspices this week at the Royal Horticultural Hall, Vincent-square, Westminster, the opening ceremony taking place on Monday, Oct. 5th, the exhibition remaining open until Friday, the 9th. The organising committee adopted the plan of excluding so far as was possible the lay visitor, and success appears to have attended the scheme, since it was quite obvious that in the main the surgeon and the physician were in attendance. The exhibits were very tastefully arranged and for the most part came well within the purview of medical matters. In a future issue we hope to give an account of certain of the exhibits that some idea may be gained of what may be regarded to be the latest developments concerning drugs, foods, surgical appliances, and so forth.

THE Emperor of Japan has sent a donation of £500 to the Seamen's Hospital Society in recognition of the assistance rendered to Japanese subjects by the Dreadnought Hospital at Greenwich.

THE opening meeting of the Chelsea Clinical Society will be held at the Chelsea Dispensary, Manor-street, King's-road, on Wednesday, Oct. 14th, at 8.30 P.M. The President, Mr. A. F. Penny, will give his opening address on "The Rise of the General Practitioner."

GUILD OF ST. LUKE.—The annual festival service of the Birmingham Ward will be held in the Cathedral Church, Birmingham, on Monday, Oct. 19th, at 5.30 P.M., when the sermon will be preached by the Rev. P. N. Waggett, M.A. Medical practitioners are cordially invited to attend.

THE HOSPITAL FOR SICK CHILDREN. — The winter session of lectures at the Great Ormond-street Hospital will be opened on Thursday, Oct. 22nd, at 4 P.M., when Mr. T. H. Kellock will give a demonstration on selected cases in the surgical wards. On Oct. 29th, at 4 P.M., Dr. F. E. Batten will give a demonstration on selected cases in the medical wards.

ROYAL EYE HOSPITAL, SOUTHWARK. — The winter session of the post-graduate course of instruction in ophthalmology will commence on Wednesday next, Oct. 14th, at 8 P.M., when Mr. L. Vernon Cargill, F.R.C.S., surgeon to the hospital, will deliver the opening lecture, the subject of which will be "The Importance to a General Practitioner of some Practical Knowledge of Ophthalmology." All medical men interested in the subject are invited to attend the lecture.

MUSEUM DEMONSTRATIONS AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—In addition to the usual course of Hunterian and other lectures to be delivered during the present winter session the Council of the Royal College of Surgeons of England has arranged a series of demonstrations in the theatre of the College at which specimens from the museum will be shown and their bearing on general and surgical pathology discussed. The first demonstration of the series is to be given on Friday next, Oct. 16th, at 5 P.M., by Dr. Arthur Keith, "On Specimens Illustrating Malformations of the Rectum and Anus"; and the second on Monday, Oct. 19th, at 12 noon, by Mr. S. G. Shattock, on "Hypertrophy." The subjects and dates of the other demonstrations may be seen in our advertisement columns and from the notices posted at the College and medical schools. These demonstrations are open to all medical men and senior students on presentation of their cards.

SCHOOL OF PHARMACY.—The seventy-seventh session was opened at 17, Bloomsbury-square, on Sept. 30th, Mr. J. Rymer Young, the President of the Pharmaceutical Society of Great Britain, being in the chair, supported by a large attendance. Professor Greenish, the dean, read his report which showed a very high percentage of successes gained by students of the school in both the major and minor examinations in pharmacy. He then enumerated the higher academical distinctions recently gained by past students and announced that 43 students had already entered for the full minor course for this session. He alluded to the recent and prospective improvements in the laboratory accommodation of the school. The President then called upon the lecturer in botany, Mr. H. J. Jeffery, to present his report on the herbarium competition. He announced the award of the silver medal to Mr. H. V. Potter for "a carefully selected collection of plants quite representative of British flora." Mr. E. S. Peck then announced that Miss Gertrude Wren had gained the Pereira medal in pharmacy with 82 per cent. of the total number of marks. She was the first lady pharmacist to attain that honour. The secretary followed by reading the report on the Jacob Bell Memorial Scholarships which were won by Mr. W. R. Pratt and Mr. S. J. Bourn. The Salters' scholar was Mr. C. Gilling, and the Redwood scholar Miss Gertrude Wren. Mr. F. H. Lescher, F.C.S., then delivered his inaugural address upon the subject of "Commerce, Science, and Work." He touched briefly upon the history of the commerce in drugs from the days of Solomon downwards, then passed on to consider a few points of prominent scientific interest, including the liquefaction of helium and the electric fixation of atmospheric nitrogen, and concluded with a dissertation upon the paramount influence of work for success and happiness.

UNIVERSITY OF LONDON: UNIVERSITY COLLEGE.—Entrance scholarships and exhibitions have been awarded as follows: Bucknill scholarship, 135 guineas, H. W. Davies (University College, Bangor). Epsom scholarship: J. A. Cowan. Two exhibitions, 55 guineas each: R. L. Horton and C. J. A. Griffin (University College, London).

KING'S COLLEGE (UNIVERSITY OF LONDON): SPECIAL LECTURES IN PHYSIOLOGY.—A course of eight lectures on the Bio-chemistry of the Brain will be delivered in the physiological laboratory, King's College, London, by Professor W. D. Halliburton and Dr. Rosenheim on Mondays at 4.30 P.M., commencing on Oct. 19th. The subjects treated will include the proteins, phosphorised constituents, cholesterin, &c., in nervous tissues, and the part played by each in health and disease. The course has been recognised by the University of London as a course of advanced lectures for the B.Sc. degree. The lectures are free to all members of King's College, to all students in any of the London medical schools, and to medical practitioners on presentation of their cards.

ASSOCIATION OF WOMEN PHARMACISTS.—The fourth annual public meeting of this association took place on Oct. 1st in the lecture theatre of the School of Pharmacy at 17, Bloomsbury-square, London, W.C. (by permission of the Pharmaceutical Society), the President, Miss Buchanan, being in the chair. Miss Buchanan opened the meeting with a few remarks on the aims of the association and its work during the year, mentioning that this year the highest honour in pharmacy, the Pereira medal, had for the first time been awarded to a woman, Miss G. Wren. Mr. J. Cantlie then addressed the meeting on Some Tropical Diseases, illustrating his remarks with lantern slides. He concluded by a few remarks on the tendency nowadays to prescribe one drug for one disease, whereas excellent results had been obtained in the past by the scientific combination of a number of drugs. Warburg's tincture, for instance, was said to contain 24 different drugs and was still widely used in India as a remedy for malaria. Mr. Cantlie was accorded a cordial vote of thanks for his lecture.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. Lewis D. Alexander, M.D., C.M. Aberd., has recently been the recipient of a handsome testimonial on his attaining his semi-jubilee as medical man in Kilcreggan. He received a deposit receipt for £250 and a silver salver with suitable inscription, while Mrs. Alexander was presented with a set of sable furs. At the meeting the provost of the town presided, while Mr. Peter Donaldson, in the absence of the Duke of Argyll, made the presentation.

TENDERING FOR PUBLIC APPOINTMENTS.—The following resolution was passed unanimously at a special council meeting of the Society of Public Analysts and other Analytical Chemists held on Oct. 1st:—

The Council of the Society of Public Analysts and other Analytical Chemists has had under consideration the practice which has been adopted recently by certain public bodies of inviting applicants for the office of public analyst to state the terms upon which they are prepared to accept such appointments. The Council is of opinion that it is against the interests of the public and degrading to the profession of analytical chemistry for appointments to be offered "on tender," and calls upon the members of the society to resist the practice.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

Mental Deficiency (Amentia). By A. F. Tredgold, L.R.C.P. Lond., M.R.C.S. Eng., Consulting Physician to the National Association for the Feeble-minded, and to the Littleton Home for Defective Children; Medical Expert to the Royal Commission on the Feeble-minded. Price 10s. 6d. net.

The Bacteriology of the Eye. By Dr. Theodor Axenfeld, Professor of Ophthalmology in the University of Freiburg. Translated by Angus Macnab, B.A., B.Sc., M.B., Ch.B., F.R.C.S., Chief Clinical Assistant, Royal London Ophthalmic Hospital. Price 21s. net.

BEDFORD PRESS, 20 and 21, Bedfordbury, London, W.C.

Transactions of the Society of Tropical Medicine and Hygiene. 1907-1908. Price not stated.

FOOD AND COOKERY PUBLISHING AGENCY, 329, Vauxhall Bridge-road, London, S.W.

Manual for Diabetic Diet and Cookery. By Ch. Herman Senn, Examiner in Sick-room Cookery to the London Hospital, Guy's Hospital, &c., Author of "Cookery for Invalids and the Convalescent." Price 1s. 6d. net.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

A Treatise on the Principles and Practice of Medicine. By Artnur R. Edwards, A.M., M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the North-Western University Medical School, Chicago; Attending Physician to Mercy, Wesley Hospitals, &c. Price 30s. net.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. IX. Rhinoliths-Thermotaxis. Price not stated.

HEALTH RESORTS BUREAU, Tenison House, 5, Green-street, Leicester-square, London, W.C.

The Health Resorts of Europe. By Thomas Linn, M.D. (of Nice). Edited by A. C. Glynn Gryffs, M.A., F.R.G.S. Fifteenth Edition. Price 2s. 6d. net.

KIMPTON, HENRY, 13, Furnival-street, Holborn, London, E.C. (STENHOUSE, ALEXANDER, 40 and 42, University-avenue, Glasgow).

Diseases of the Nose, Throat, and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology, and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois. Price 28s. net.

The Principles and Practice of Gynecology, for Students and Practitioners. By E. C. Dudley, A.M., M.D., Ex-president of the American Gynecological Society, Professor of Gynecology, North-Western University Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago. Fifth edition, revised and enlarged. Price 25s. net.

Neurasthenia. By Gilbert Ballet, Professeur agrégé à la Faculté de Médecine de Paris, Médecin de l'Hôtel Dieu, Président de la Société de Neurologie. Translated from the third French edition by P. Campbell Smith, M.D. Price 6s. net.

Nervous and Mental Diseases. For Students and Practitioners. By Charles S. Potts, M.D., Professor of Neurology in the Medico-Chirurgical College of Philadelphia, Neurologist to the Philadelphia Hospital; formerly Associate in Neurology in the University of Pennsylvania. Second edition, revised and enlarged. Price 12s. 6d. net.

LIPPINCOTT (J. B.) COMPANY, Philadelphia and London.

International Clinics. Edited by W. T. Longcope, M.D., Philadelphia, U.S.A., with collaboration. Volume III. Eighteenth series, 1908. Price not stated.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, London; and New York, Bombay, and Calcutta.

The Bone-Marrow. A Cytological Study. Forming an Introduction to the Normal and Pathological Histology of the Tissue, more especially with regard to Blood Formation, Blood Destruction, &c. Together with a short Account of the Reactions and Degenerations of the Tissue in Disease. By W. E. Carnegie Dickson, M.D., B.Sc. Edin., F.R.C.P. Edin., Lecturer on Pathological Bacteriology and Senior Assistant to the Professor of Pathology in the University of Edinburgh, Assistant Pathologist to the Edinburgh Royal Infirmary. With Coloured Plates and Microscopical Photographs by Richard Muir. Price 42s. net.

MACMILLAN AND CO., LIMITED, St. Martin's-street, London, W.C.

Treatment of Consumption. By W. Camac Wilkinson, B.A. Syd., M.D. Lond., F.R.C.P., Lecturer in Medicine, University of Sydney; Hon. Physician, Prince Alfred Hospital, Sydney. Price 10s. net.

MINING JOURNAL, THE, London.

Who's Who in Mining and Metallurgy. 1908. Founded by George Safford. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, London, W.C.

The Sexual Life of Our Time in its Relation to Modern Civilisation. By Iwan Bloch, M.D., Physician for Diseases of the Skin and for Diseases of the Sexual System in Charlottenburg, Berlin; Author of "The Origin of Syphilis," &c. Translated from the Sixth German Edition by M. Eden Paul, M.D. Price 21s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

DIMOCK, HORACE, M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Anæsthetist at St. George's Hospital.

FOWLER, T. WEBB, M.D., Ch.B. Birm., F.R.C.S. Edin., L.R.C.P. Lond., has been appointed Honorary Medical Officer to the Coventry and Warwickshire Hospital.

GLEED, SEYMOUR R., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Hospital for Women, Brighton.

HOWSE, ARTHUR EDWARD, M.R.C.S., L.S.A., has been appointed District Medical Officer by the Frome (Somerset) Board of Guardians.

HULBERT, H. L. P., M.B., B.S., D.P.H. Camb., has been appointed School Medical Officer to the Northamptonshire Education Committee.

JEANS, FRANK A. G., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Honorary Assistant Surgeon to the Royal Infirmary, Liverpool.

PATERSON, ALEXANDER S., M.B., Ch.B. Edin., has been appointed House Physician at the Salford Royal Hospital.

PEEK, J. H., M.B., Ch.B. Edin., has been appointed Resident Surgeon at Ramsgate General Hospital and Visiting Surgeon to the St. Lawrence Dispensary.

RODERICK, H. B., M.D., B.S. Cantab., has been reappointed Demonstrator of Surgery in the University of Cambridge.

SACHS, ALFRED L., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Queen's Hospital for Children, Finchley-road, N.W.

TAYLOR, STUART HOPCRAFT STANLEY, M.B., Ch.B. Edin., has been appointed District Medical Officer by the Chippenham (Wilts) Board of Guardians.

TOLPUTT, PERCY THOMAS, L.R.C.P., L.R.C.S., L.M. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer by the Pembroke Board of Guardians.

WOODFORDE, G. A. W., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Junior Resident Medical Officer at Queen Charlotte's Hospital.

WRIGLEY, PHILIP ROSCOE, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Surgeon to the Salford Royal Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100, with board, lodging, and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeons, unmarried. Salary £170 per annum, and rooms, fire, lights, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, with board, apartments, and attendance.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100.

BRIDGNORTH AND SOUTH SHROPSHIRE INFIRMARY.—House Surgeon. Salary £100 per annum, with board and lodging.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board and residence. Also Second House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BRISTOL GENERAL HOSPITAL.—Casualty House Surgeon. Salary £80 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, rising to £150, with board and lodging.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Resident Medical Officer. Salary £120 per annum, with board, &c.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with residence, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £55 per annum, with board and lodging.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing. Also Physician.

GILLINGHAM (KENT) EDUCATION COMMITTEE.—School Medical Officer. Salary at rate of £250 per annum, rising to £300.

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, attendance, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £110 per annum, with apartments, rations, and washing.

HAMPSTEAD GENERAL HOSPITAL.—Physician to Out-patients, Surgeon to Out-patients, and Ophthalmic Surgeon to Out-patients.

HOMES FOR LITTLE BOYS, Farningham and Swanley, Kent.—Medical Officer, unmarried. Salary £100 per annum, with board, residence, and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician and House Surgeon for six months. Salaries £30, with board and residence. Also Assistant Casualty Medical Officer for six months. Salary £20, with board and residence.

HOSPITAL FOR EPILEPSY AND PARALYSIS AND OTHER DISEASES OF THE NERVOUS SYSTEM, Maida Vale, W.—Resident Medical Officer for six months. Salary at rate of £50 per annum; with board, lodging, and washing.

HOSPITAL FOR WOMEN, Soho-square, W.—Resident Medical Officer for six months. Salary at rate of £60 per annum.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—House Surgeon for six months. Salary at rate of £65 per annum.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

LANCASTER, ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

LEEDS, HOSPITAL FOR WOMEN AND CHILDREN.—House Surgeon. Salary at rate of £50 per annum, with board.

LEEDS PUBLIC DISPENSARY.—Two Resident Medical Officers. Salary £100 per annum, with board and lodging.

LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, rooms, and washing.

LIVERPOOL WORKHOUSE, Brownlow-hill.—Assistant Medical Officer. Salary £100 per annum, with rations.

LONDON LOCK HOSPITAL, Dean-street, W.—Anæsthetist to the Male Hospital.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Resident Surgeon, as Junior and later as Senior. Salary at rate of £80 and £120 per annum respectively, with board and residence.

MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Cavendish-square, W.—Honorary Pathologist.

MIDDLESEX HOSPITAL.—Second Assistant to the Director of the Bacteriological and Clinical Laboratories. Salary £100 per annum. Also Hollins, Emden, and Salters Company's Scholarships. Value £100 per annum each.

MOUNT VERNON HOSPITAL FOR DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Clinical Pathologist. Salary 100 guineas per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Third Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

NEW SOUTH WALES, AUSTRALIA, QUEEN VICTORIA HOMES FOR CONSUMPTIVES.—Resident Medical Officer, unmarried. Salary £250 per annum, with board and residence.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Junior House Surgeon, unmarried. Salary at rate of £40 per annum, with board, &c.

PAPA WESTRAY PARISH COUNCIL, Orkney.—Public Vaccinator. Salary £90 per annum, with fees and house.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Visiting Physician. Honorarium £100 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Senior and Assistant House Surgeon, both for six months. Salary £100 and £50 per annum respectively, with board, &c.

PRINCE OF WALES' GENERAL HOSPITAL, Tottenham, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician, all for six months. Salary of two former £75 per annum, and of two latter £40 per annum, with residence, board, and laundry. Also Honorary Anæsthetist.

ROYAL EAR HOSPITAL, Soho.—House Surgeon. Salary £40 per annum.

ROYAL NAVY, MEDICAL DEPARTMENT.—Fifteen Commissions.

ST. BARTHOLOMEW'S HOSPITAL.—Assistant Aural Surgeon.

SOUTHEND-ON-SEA EDUCATION COMMITTEE.—School Medical Officer. Salary £250 per annum.

STAFFORDSHIRE COUNTY ASYLUM, Cheddleton, Leek.—Junior Assistant Medical Officer for six months. Salary £150 per annum, with board, residence, laundry, &c.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Resident Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and laundry.

TIVERTON, DEVONSHIRE, INFIRMARY AND DISPENSARY.—House Surgeon and Dispenser. Salary £80 per annum and all found.

TOTTENHAM EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £250 per annum.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

TUNBRIDGE WELLS GENERAL HOSPITAL.—Senior and Junior House Surgeons, unmarried. Salary, Senior £100, Junior £80 per annum, with board, apartments, &c.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board, lodging, and laundry. Also Honorary Anæsthetist.

VIRGINIA WATER, SURREY, HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer (female). Salary £150 per annum, rising to £200, with board, lodging, laundry, attendance, &c.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Physician, unmarried. Salary £65 per annum, with board, residence, &c.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of a vacancy as Certifying Surgeon under the Factory and Workshop Act at Poole, in the county of Dorset.

Births, Marriages, and Deaths.

BIRTHS.

COOK.—On Sept. 27th, at Mengo, Uganda, East Africa, the wife of John Howard Cook, M.S., F.R.C.S., of a son.

COOKE.—On Oct. 4th, at 14, Arden-road, Church End, Finchley, N., the wife of E. Hunt Cooke, M.A., M.B., G.I.P.Ry., Lonavla, Bombay, of a son (Alfred Hunt).

MAINGAY.—On Oct. 4th, at Queen-street, Scarborough, the wife of H. B. Maingay, F.R.C.S., of a daughter.

SCOTT TURNER.—On Oct. 4th, at Anerley-road, Upper Norwood, the wife of Arthur Scott Turner, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

FELL—WALLACE.—On Sept. 30th, at Lindridge Church, Worcestershire Matthew Henry Gregson Fell, Captain R.A.M.C., to Marion Isobel, only child of the late Robert Wallace.

SCOONES—STANLEY-ADAMS.—On Sept. 30th, at St. Mary's Church, Spring-grove, Isleworth, Harold Edward Scoones, M.R.C.S. Eng., L.R.C.P. Lond., to Ethel Constance, third daughter of the late William S. Stanley-Adams, M.D., C.M., and Mrs. Stanley-Adams.

DEATHS.

CAMPBELL.—On Oct. 2nd, at Villa Malibran, near Nice, Charles Moss Campbell, M.D. Edin., aged 64. Friends will please accept this the only intimation.

LEAHY-LYNCH.—At 2, Finsbury Park-road, London, N., on Oct. 5th, Tim Leahy-Lynch, M.D., in his 51st year. Beloved husband of Agnes Murdoch.

LEESON.—On Oct. 4th, at St. Leonards-on-Sea, Arthur Edmund Leeson, M.A., M.D., aged 76 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EXEMPLARY SENTENCES UPON GARBAGE-MONGERS.

WE are able to record two more sentences which may serve as salutary deterrents upon persons who make a living by selling diseased or decomposed meat to the public. At Clerkenwell police court on Sept. 30th Alfred Wagner of Finsbury was fined £50, with an alternative of three months' imprisonment, for having a quantity of bad pork on his premises, upon which were appliances for making sausages, saveloys, and other highly flavoured foods in which the taste of bad meat can be disguised. An inspector found 20 pounds of scrap meat which was soft and smelt very offensively. Mouldy meat was in the ice-safe, and stinking pigs' heads were found which the defendant admitted that he had bought at 1s. per stone. Altogether 250 pounds of unsound meat were seized. The other case occurred at Newcastle on the same day, when William Dunn was charged with having in his possession a heifer for the purpose of preparation for sale, which was unfit for the food of man. It was stated that Dunn, in addition to carrying on business in the butcher market, carried on a shipping business, and that he kept two class of beasts, one for the "family trade" and one for the supply of ships. The animal in question, which was badly tuberculous, was intended for the latter purpose. It was alleged that similar small beasts, known as "stirks," were kept, on the premises until a shipping order came in, when they were slaughtered, dressed, and sent straight on board ship, and the inspector never got a chance of inspecting them. The defendant's manager admitted that the better class of beast was insured against tuberculosis but not the "stirk" class. The bench characterised the case as disgraceful and inflicted the maximum fine—£20 and costs, or three months' imprisonment. A second charge of a similar nature was admitted. In the course of the hearing it was given in evidence that three men do all the inspection in the 132 slaughter-houses of Newcastle and carry out the Diseases of Animals Act for the whole city as well, a staff which appears insufficient for adequate supervision.

SURGERY HOURS FOR POOR-LAW PATIENTS.

To the Editor of THE LANCET.

SIR,—It has been customary in the six parishes of the union in which I am a district medical officer to have a morning hour for seeing parish patients. The guardians have now passed a resolution asking the medical officers to "set apart half an hour each evening for receiving parish patients." Hitherto a few patients have been seen in the evening, but this has been more or less voluntary. I should be glad to know from your readers if it is the usual custom through England for parish patients to have the choice of coming to the surgery either in the morning or evening.

I am, Sir, yours faithfully,

Sept. 30th, 1908. DISTRICT MEDICAL OFFICER.

A DISGUSTING PRACTICE.

AT Swansea on Sept. 30th a milkman was fined £5 for not keeping his milk cans clean. It was proved that the man used his milk cans for holding and carrying "pigs' wash." For the defence it was contended that hot water would cleanse the cans and that "the practice had been carried on by hundreds of milkmen."

EARLY ENGLISH MEDICAL BOOKS.

To the Editor of THE LANCET.

SIR,—I can assure Dr. Oscar Jennings that I did not think that he meant "work" when he said "book." As to the meaning of the term "book," it seems to me that as the British Museum has an officer entitled Keeper of the Printed Books the existence of a class of books which are not printed is implied, but the point is of very little importance. With regard to medical works of the fourteenth and fifteenth centuries being the earliest works in English, I purposely did not refer to the Leechbook of Bald and the other Anglo-Saxon medical manuscripts which were edited by Cockayne, for although Anglo-Saxon was the language spoken in England in the tenth century it can hardly, I think, be called English. Take, for instance, the following sentence, though I have taken it from the Anglo-Saxon Life of St. Guthlac, which MS. may be of earlier date than the Leechbook, as I have no copy of the latter work at hand: "Ne he cnihtlice galnysse næs begangende, ne idele spellunge folcricra manna, ne ungelicilice olæcunge, ne leaslicetunge." By English I mean such a form of that language as an ordinary educated man could read with a fair amount of facility nowadays. I am, Sir, yours faithfully,

Oct. 6th, 1908. M.D.

THE "IDEAL VALVE" FEEDER.

WE have received from Messrs. H. and T. Kirby and Co., Limited, 14, Newman-street, London, W., a feeding-bottle for infants which is of the familiar boat shape. The points claimed in its favour are that it is open at both ends and so can be flushed under a stream of water; that it has no corners, and therefore can be thoroughly cleansed; and that it is graduated, as a guide to the quantity of the food given. It is also fitted with a solid

glass valve, with no indiarubber attachment, "which requires very little regulating, cannot leak, become clogged, drop out, or be pulled out by the infant, and which yet allows an even supply of air behind the column of milk." The valve is formed by a hole in the neck of the bottle and a longitudinal niche cut in the neck of the stopper, which is kept from dropping out by an easily removed metal collar. When the niche and hole are in register the valve is opened on the principle of a drop bottle, except that the valve gives ingress to air instead of egress to fluid. We find that by turning the valve partly out of register the flow from the teat can be evenly regulated, and we consider that the bottle has the advantages which we have stated and regard it as a useful hygienic appliance for the nursery. The teat is non-collapsible and can be boiled without injury. Messrs. Kirby and Co. ask us to state that a sample bottle will be sent free to any medical man on application.

DYSPEPSIA: A NEW TREATMENT.

THE following postcard was addressed recently to a physician in charge of out-patients at a London general hospital:—

SIR,—I have read rightly or wrongly that typhoid fever is a specific for dyspepsia, a thing I am a martyr to. I have spent no end of money trying to get cured, visiting about 50 doctors without result, also have attended St. ——'s nine months. Now I am only 23 and ambitious. I am willing to do anything to get rid of my malady and if it is possible to be inoculated with the fever I am willing to make the experiment.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

SURGICAL SECTION (Hon. Secretaries—Herbert F. Waterhouse, W. G. Spencer): at 5.30 P.M.

Paper:

Mr. James Berry and Mr. Paul L. Giuseppi: Traumatic Rupture of the Intestine, with a Case of Recovery after Operation and an Analysis of the 125 Cases which have occurred in 10 London Hospitals during the last 15 years.

THURSDAY.

DERMATOLOGICAL SECTION (Hon. Secretaries—Arthur Whitfield, E. G. Graham Little): at 5 P.M.

Cases:

Dr. Dawson: (1) Sclerodermia Diffusa; (2) Acne Agminata.
Dr. Pernet: Granuloma Annulare (Female).
(And other Cases not yet notified.)

FRIDAY.

ELECTRO-THERAPEUTICAL SECTION (Hon. Secretary—Reginald Morton): at 8.30 P.M.

Paper:

Mr. W. Deane Butcher: The Amsterdam Congress of Electrology and Radiology.
(Lantern slides and radiograms will be shown).

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

NOTICE.—A Discussion on the Influence of Heredity on Disease, with special reference to Cancer, Tuberculosis, and Diseases of the Nervous System will be held at a SPECIAL MEETING OF FELLOWS OF THE SOCIETY on Wednesday, Nov. 11th. Fellows who desire to take part in the Discussion are invited to send in their names to the Secretary.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8 P.M., Annual Meeting. 8.30 P.M., Ordinary Meeting. Mr. C. B. Lockwood (the new President): Address. Mr. J. R. Morison (Newcastle-on-Tyne): Notes on a Case in which a Portion of a Lung was excised.

SOCIETY FOR THE STUDY OF INEBRIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—4 P.M., Discussion on the Relation of Alcohol to Feeble-mindedness (opened by Dr. W. A. Potts).

HUNTERIAN SOCIETY, Finsbury-circus, E.C.

WEDNESDAY.—8.30 P.M., Dr. J. Mackenzie: The Bearing of Hunter's Work on Recent Advances in the Study of Heart Affections.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Millbank, S.W.

WEDNESDAY.—8.30 P.M., Major R. J. Blackham, R.A.M.C., D.P.H.: The Micro-organisms of Dysentery.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, 11, Chandos-street, Cavendish-square, W.

THURSDAY.—8 P.M., Card Cases by Mr. M. Ramsay, Mr. S. Stephenson, Mr. A. Ogilvy, and others. 8.30 P.M., Mr. F. G. Thomas and Mr. J. H. Parsons: A Case of Dipterous Larva in the Anterior Chamber.—Mr. N. B. Harman: Six Generations of Piebalds. (Opening Meeting of the Session.)

CHILD STUDY SOCIETY LONDON, Parkes Museum, Margaret-street, W.

THURSDAY.—8 P.M., Dr. C. W. Kimmins: Introductory Address on the Relation of the Curriculum to the Development of the Child.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 20, Hanover-square, W.

FRIDAY.—8.30 P.M., Dr. A. E. Horn: An Investigation of Cerebro-Spinal Meningitis in the Northern Territories of the Gold Coast (with microscopic demonstration).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

FRIDAY.—5 P.M., Prof. Keith: On Specimens illustrating Malformations of the Rectum and Anus. (Museum Demonstration.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. Galloway: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. J. McCann: How to Diagnose Cancer of the Womb (with lantern slides).

TUESDAY.—4 P.M., Dr. H. Mackenzie: Clinique (Medical) 5.15 P.M., Lecture:—Dr. G. H. Savage: Borderlands between Badness and Madness.

WEDNESDAY.—4 P.M., Mr. A. H. Tubby: Clinique (Surgical). 5.15 P.M., Lecture: Mr. C. R. B. Keetley: Affections of the Toes, Feet, and Ankles.

THURSDAY.—4 P.M., Mr. Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Grant: Remarks on Prurient Nasal Discharges.

FRIDAY.—4 P.M., Dr. StClair Thomson: Clinique (Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 4.30 P.M., Lecture:—Sir R. D. Powell, Bart., K.C.V.O.: Opening Address.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Mr. Etherington-Smith: Demonstration of Selected Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: Treatment of Typhoid Fever.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. Lawrence: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 4 P.M., Special Lecture:—Mr. Lawrence: Nasal Obstruction.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Prof. Hewlett: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carless.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Non-valvular Diseases of the Heart.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. J. H. Evans). 2.30 P.M., Medical Out-patient (Dr. Whipham); Nose, Throat, and Ear (Mr. Carson); X Rays. 4.30 P.M., Medical In-patient Clinic (Dr. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Surgical (Mr. Edmunds); Gynæcological (Dr. Giles). 4.30 P.M., Special Demonstration of Selected Medical Cases (Dr. Chappel).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. Whipham); Skin (Dr. Meachen); Eye (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. Giles). Clinics:—Medical Out-patient (Dr. Whiting); Surgical (Mr. Carson); X Rays. 3 P.M., Medical In-patient (Dr. Chappel). 4.30 P.M., Lecture:—Mr. W. Edmunds: The Treatment of Tuberculous Glands.

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. J. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Clinics:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks).

HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck-street, W.

THURSDAY.—5 P.M., Dr. H. Campbell: Selected Cases.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Essentials in the Study of Dermatology.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Dr. Batten: Infantile Paralysis.
FRIDAY.—3.30 P.M., Dr. Batten: Family Diseases.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (12th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Ophthalmic (2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (14th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.).

THURSDAY (15th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.).

FRIDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (17th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (2.30 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 8th, 1908.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Oct.	2	30·17	SSE	...	110	79	57	58	59	Hazy
,,	3	30·19	E.	...	105	77	55	56	56	Fine
,,	4	30·24	S.W.	...	103	74	55	55	55	Hazy
,,	5	30·25	E.	...	71	62	55	58	58	Hazy
,,	6	30·26	E.	...	97	66	53	54	57	Fine
,,	7	30·16	S.E.	...	84	67	49	50	51	Foggy
,,	8	30·15	S.	...	61	61	51	57	57	Overcast

During the week marked copies of the following newspapers have been received:—*Leeds Mercury, Hanley Sentinel, Dundee Advertiser, Bradford Telegraph, Morning Leader, Leeds Post, Leeds Evening Post, Manchester Guardian, Glasgow News, Pall Mall Gazette, Carlisle Express, Sheffield Telegraph, Westminster Gazette, Wolverhampton Express, Downpatrick Recorder, Yorkshire Observer, Scotsman, Manchester News, Birmingham Post, York Herald, Dublin Times, Exeter Gazette, Belfast News Letter, Wolverhampton Evening News, Cardiff News, &c.*

PRINT IN BINDING

Communications, Letters, &c., have been received from—

A.—Ardath Tobacco Co., Lond.; Mr. J. Astier, Asnières; Dr. Alvernhe, Canet; A Sixth Medical Man; Association of Women Pharmacists, Lond., Secretary of; Alliance Press Agency, Manchester; Dr. R. W. Allen, Lond.

B.—Mr. G. Sherman Bigg, Lond.; *British and Colonial Druggist*, Lond., Secretary of; Dr. R. Bell, Lond.; Dr. W. Berry, Wigan; Dr. James Buchanan, Watford; Dr. G. Burnside Buchanan, Glasgow; Mrs. Baird, Lond.; Dr. J. L. Bogle, Stresa; Mrs. Behnke, Lond.; British Oxygen Co., Lond., Secretary of; Birmingham General Hospital, House Governor of; Mr. C. Birchall, Liverpool; Messrs. J. Barker and Co., Lond.; Messrs. Beaumont and Bright, Maldon; Messrs. Boyle and Son, Lond.; Dr. R. A. Bennett, Torquay; Mr. P. C. Bose, Midnapur; Bolton Infirmary, Secretary of; Mr. E. Baker, Birmingham; Messrs. Blundell and Rigby, Lond.; Bristol General Hospital, Secretary of; Messrs. Bates, Hendy, and Co., Reading.

C.—Dr. Harry Campbell, Lond.; Child Study Society, Lond.; Mr. F. E. Cane, Lond.; Messrs. J. and A. Churchill, Lond.; Continental Tyre and Rubber Co., Lond.; Messrs. S. Clark and Co., Lond.; Colchester, Borough of, Clerk to the; Messrs. Samson Clark and Co., Lond.

D.—Dr. Lovell Drage, Hatfield; Mr. A. Stayt Dutton, Oxford; Devon County Education Committee, Exeter, Secretary of; Messrs. Davy, Hill, and Hodgkinson, Lond.; Derby Corporation, Secretary to Education Committee; Denver Chemical Manufacturing Co., Lond., Secretary of; Dumfries and Galloway Royal Infirmary, Secretary of; Dr. W. D. Dunwoody, Harrogate.

E.—Ethics.

F.—Dr. F. E. Fremantle, Lond.; Mrs. Francis, Callington.

G.—Dr. Alfred Gradenwitz, Berlin; Gillingham (Kent) Education Committee, Secretary of; Miss F. Gulland, Lond.; Miss A. M. Greg, Lond.; Gloucester General Infirmary, Secretary of; Messrs. W. Green and Sons, Edinburgh; Sir W. R. Gowers, Lond.

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